AUDIO-VIDEO STEREO RECEIVER

KR-V77R

SERVICE MANUAL

KENWOOD

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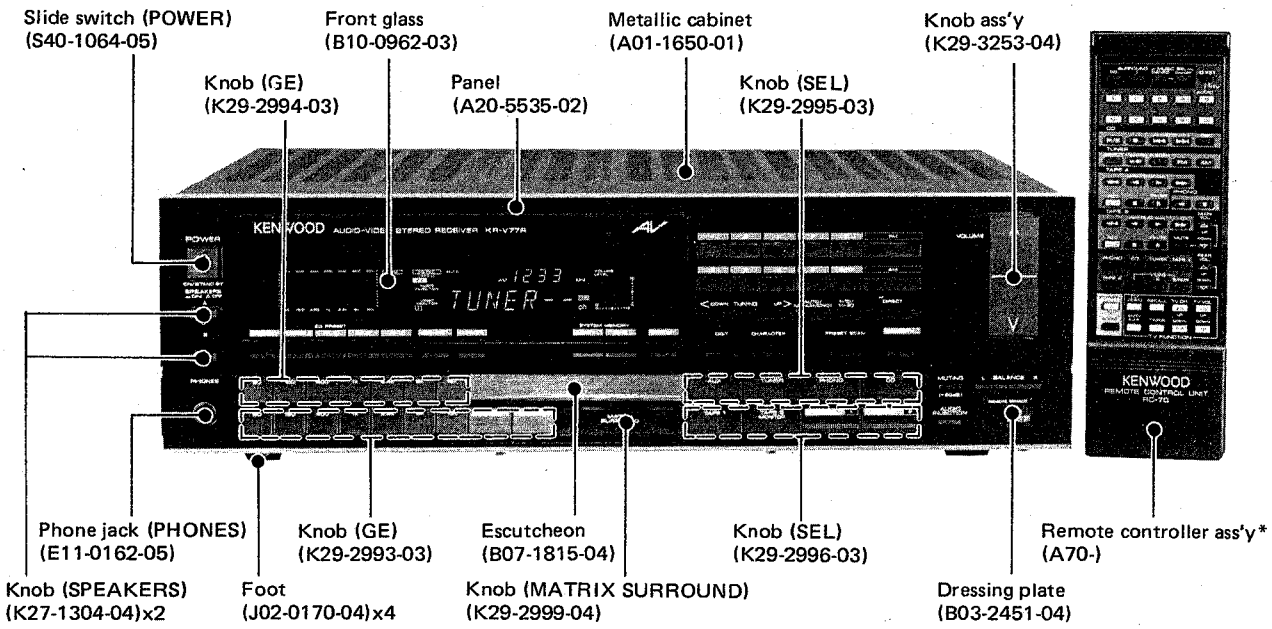
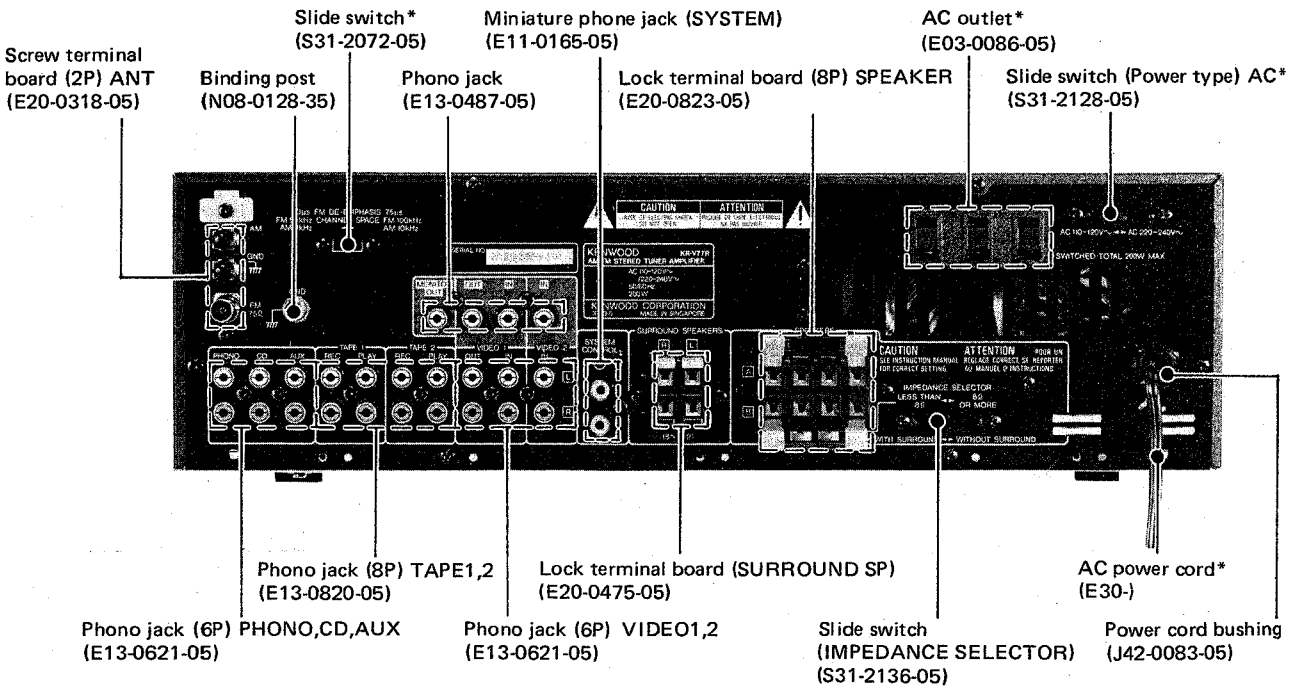




* Refer to parts list on page 51.

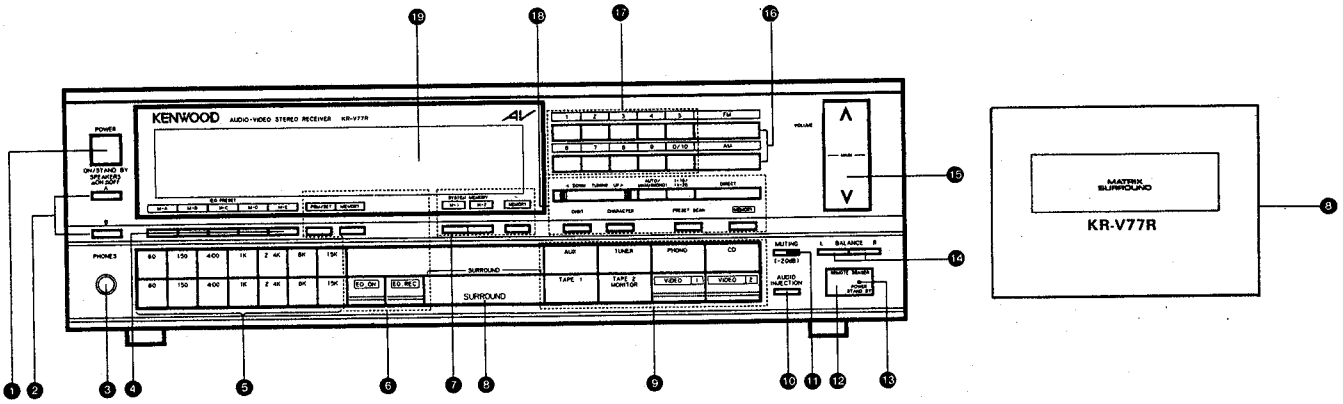
KR-V77R

CONTENTS/CONTROLS AND INDICATORS

CONTENTS

CONTROLS AND INDICATORS 2
DISASSEMBLY FOR REPAIR 14
BLOCK LEVEL DIAGRAM 15
CIRCUIT DESCRIPTION
Description of components 16
Microprocessor : μPD75108CW-170 or -200
(X14-2320-11 : IC1) 18
ADJUSTMENT 24
REGLAGE 25
ABGLEICH 26
ADJUSTMENT/REGLAGE/ABGLEICH 27
VOLTAGE CHECK TABLE 28
PC BOARD (COMPONENT SIDE VIEW) 29
PC BOARD (FOIL SIDE VIEW) 33
CIRCUIT DIAGRAM 37
EXPLODED VIEW 49
PARTS LIST 51
SPECIFICATIONS ..... BACK COVER

CONTROLS AND INDICATORS



❶ POWER switch
Press this switch to turn on power. Press it again to turn power off.

❷ SPEAKERS A and B switches
A,B OFF – This position silences all speakers to permit private use of headphones.
A ON – Activates speakers connected to the SPEAKERS A terminals on the rear panel.
B ON – Activates speakers connected to the SPEAKERS B terminals on the rear panel.
A,B ON – Activates speakers connected to the SPEAKERS A and B terminals simultaneously.

Note:
When the SPEAKERS A and B switches are used at the same time, the speakers connected to the SPEAKERS A and B terminals are connected in series. In this respect, whenever using the SPEAKERS A and B switches at the same time, be sure that two pairs of speakers are connected to the terminals A and B, otherwise no sound is output.

❸ PHONES jack
Stereo headphones are plugged into this jack.

❹ EQ (Equalizer) PRESET keys
Use these keys to store equalizer curves in memory or to recall them.
PGM: User-adjusted equalizer curves can be programmed as desired and stored in memory; up to five patterns.
SET: Five factory-preset equalizer curves are stored in memory.
Up to 10 equalizer curve memories are available in total. Press the PGM/SET key to select either the user-programmed pattern or the factory-preset pattern.

❺ Equalizer level controls
Adjust these controls up and down to equalize the sound by ±12 dB to the center frequency indicated.

❻ Equalizer function keys

- **Equalizer preset mode key (PGM/SET)**
  Each time this key is pressed, the recall mode of the equalizer preset curves alternates between PGM (user programmed patterns) and SET (factory preset patterns).

CONTROLS AND INDICATORS

● **Equalizer preset MEMORY key**
This key is used to store an equalizer curve into the PGM PRESET memories. First, select the desired equalizer curve and then press this key. Then press any of the PRESET (A to E) keys. The selected equalizer curve will be stored in the memory indicated by the PRESET key pressed.

● **Equalizer (EQ, ON) key**
Press this switch to ON and the frequency characteristic will be modified by passing through the graphic equalizer. In the DEFEAT position, the frequency characteristic remains unchanged.

● **EQ REC key**
Used when recording the source onto the tape deck through the equalized response of the graphic equalizer.

⑦ **System memory keys**
● **SYSTEM MEMORY channel key (M-1/M-2)**
Two groups of memory can be used with the preset channel key of the System Memory system. After entering the memory preset mode by pressing the SYSTEM MEMORY key, press the M-1 or M-2 key.

● **System MEMORY key**
This key is used to store the currently playing condition in memory.

⑧ **DOLBY SURROUND key**
Press this key to activate or deactivate the surround output. In the KR-V77R, MATRIX surround mode is automatically entered when this key is pressed.
With the KR-V77R, when the speaker selector switch at the rear is set to 8Ω OR MORE, the surround mode cannot be obtained.

⑨ **Input selector switches**
TAPE 1 – Press this switch to play back a tape deck connected to the TAPE 1 jacks.
TAPE 2/MONITOR – Press this switch to play back a tape deck connected to the TAPE 2 jacks. (The TAPE 2 switch is operated in priority to any other audio input systems.)
VIDEO 1 – Selects the video recorders connected to the VIDEO 1 jacks.
VIDEO 2 – Select the video recorders connected to the VIDEO 2 jacks.
CD – Selects the source connected the CD jacks.
PHONO – Selects the program source played on the turntable.
TUNER – Selects the tuner mode.
AUX – Selects the source connected the AUX jacks.

⑩ **AUDIO INJECTION key**
Press this key ON when replacing the sound of VIDEO 2 with that of AUDIO source is required on dubbing between VIDEO sources.

⑪ **MUTING key**
When the muting key is pressed, the MUTING indicator in the display window will flash, and the overall listening sound level is reduced.
When the key is pressed again, you can restore exactly the same listening level as before.

⑫ **REMOTE SENSOR**
Point the supplied remote control unit towards this sensor and operate.

⑬ **REMOTE POWER STAND BY indicator**
This indicator lights so far as the power cord is plugged into the AC outlet. It is lit to show that the POWER switch on the front panel or the POWER key on the remote control unit can be activated.

⑭ **BALANCE control key**
Governs the amount of sound coming from each paired speakers to get optimum stereo effect. Pressing the RIGHT key will decrease the left channel volume and pressing the LEFT key will decrease the right channel volume. When the BALANCE controls is pressed, display window shows the BALANCE indicator.

⑮ **MAIN VOLUME control key**
This control adjusts the left- and right-channel volumes simultaneously. Set it for the desired listening level. Pressing the up (Λ) side increases the volume and pressing the down (V) side decreases it.
Indicator (Λ) or (V) blinks when this unit is operated directly or with the remote control unit.
The volume level of the rear speakers are controlled at the same time.

⑯ **Band selector switches**
FM – For FM broadcasts.
AM – For AM broadcasts.

⑰ **Numeric (1 ~ 0/10) keys**
Use these keys to:
1) input directly the digits of frequencies, or
2) store and recall frequencies in the preset channel.

⑱ **Tunning function keys**
● **DIGIT key**
In the station name input mode, pressing this key advances the column after selecting the character with the Tuning UP/DOWN key. When this operation is repeated four time, the station name input mode will be released automatically.

● **CHARACTER key**
Press this key to activate the station name input mode.

CONTROLS AND INDICATORS

● **PRESET SCAN key**
Use this key for preset channel scanning.
When a frequency stored in the preset memory is being received, pressing this key shifts the reception to the next frequency stored in the preset memory. (The preset channels are scanned in the order 1, 2,..... 11, 12,..... 20,)
To stop a scanning operation, press the SCAN key again.

● **MEMORY key**
When the input mode is TUNER, use this key to store new broadcast station data in the preset channel memory. By pressing the MEMORY key, setting the preset channel to 1-10 or 11-20 and by pressing one of the numeric keys, the frequency being received is stored in the memory in the numeric key pressed.

● **DIRECT key**
Used to tune to the station directly. Input the desired frequency numerics with the numeric keys after pressing the DIRECT key.

● **Preset function (1-10/11-20) key**
Used to select 1-10 or 11-20 setting for the preset channel. In either FM or AM mode, 20 stations can be preset as random as each setting ("1-10" or "11-20") can contain 10 preset stations. Indicator "1-10" lights when "1-10" setting is used, and indicator "11-20" lights when "11-20" setting is used.

● **AUTO/MANUAL (MONO) key**
When this key is pressed, the AUTO indicator will light. The frequency will automatically stop at a station in automatic tuning mode. When a stereo broadcast is received, the output sound is automatically changed to stereo.

● **TUNING keys**
Used to change the frequency. Pressing UP side will advance to the higher frequency and pressing DOWN side to the lower frequency.
In the station name input mode, this key is used to select the character.

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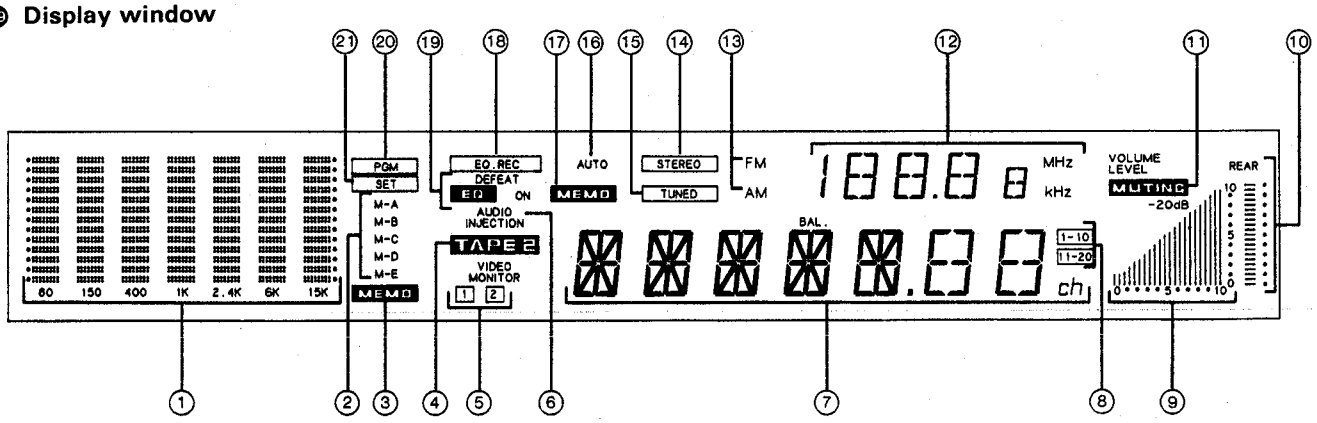
⑲ **Display window**



① In graphic equalizer mode, displays the equalizer level display, the music spectrum analyzer display and peak hold display.
② Displays when storing or recalling equalizer preset channel in memory.
③ Lights when the Memory (EQ) key is pressed to store the desired equalizer curve.
④ Lights when the TAPE-2 key is pressed.
⑤ VIDEO monitor out indicator.
⑥ Lights when the AUDIO INJECTION key is pressed.
⑦ This displays the input mode, preset channel, station name, front volume level, rear level, balance, DOLBY surround (KR-V87R), EQ preset channel, SPI level (KR-V87R), system memory indicator.
⑧ "1-10"or "11-20" lights according to the selection of the preset function keys.
⑨ Front volume level indicator
This indicator displays the volume level for the front-channel speakers.
⑩ Rear volume level indicator (KR-V87R)
The volume level of the rear-channel speakers is indicated within a ± 20 dB range.
⑪ Flashes when the MUTING key is pressed.
⑫ Displays the digital frequency display.
⑬ Displays the tuner band "FM" or "AM"
⑭ In tuner mode, lights when a stereo broadcast is tuned in.
⑮ In tuner mode, lights when a station is tuned in.
⑯ Lights during auto tuning.
⑰ Lights when the MEMORY key is pressed.
⑱ This indicator lights when EQ REC (equalizer recording) key is pressed.
⑲ Lights when the Equalizer (EQ. ON) key is set to "ON". Lights when the Equalizer (EQ. ON) key is set to "DEFEAT".
⑳ Lights when the Equalizer preset mode (PGM/SET) key is set to "PGM".
㉑ Lights when the Equalizer preset mode (PGM/SET) key is set to "SET".

CONTROLS AND INDICATORS

■ Listening to AM/FM

1. Press the Power switch to ON.
2. Press the TUNER key of the input selector.
3. Select FM or AM of the band (FM/AM) selector.
4. Tune to the required station with following procedures: Auto tuning, Manual tuning or Direct tuning.

Auto tuning

1. Press the AUTO/MANUAL (MONO) key to set to "AUTO".
2. Press the UP or DOWN TUNING key: The frequency will automatically increase or decrease until a station with sufficient signal level is received. To stop the frequency scanning before a station is received, press the AUTO/MANUAL key to set to "MANUAL".
3. Adjust the VOLUME control to the required listening level and use the graphic equalizer control to adjust the sound to your own preference.

Manual tuning

1. Press the AUTO/MANUAL (MONO) key to set to "MANUAL".
2. Press the UP/DOWN TUNING key to tune in the desired station.
   To continuously increase or decrease frequencies, hold the TUNNING key depressed.
3. Adjust the VOLUME control to the required listening level and use the graphic equalizer control to adjust the sound to your own preference.

Direct tuning

1. Select FM or AM with the FM, AM selector switch.
2. Press the DIRECT key.
3. Input the desired frequency with numeric keys.
4. The receiver enters the radio reception mode just after the frequency value has been input.
   (If the input value is outside the tuning range, the frequency display flashes for 5 seconds and the receiver returns to the radio reception mode of the last channel.)

■ Presetting broadcast station data

In total up to 20 stations data (station frequency and station name) can be stored in memory.

1. Select the desired station with either AUTO tuning, MANUAL tuning or DIRECT tuning.
2. Input the broadcast station name in accordance with the character input procedure.
   For the broadcast station names, up to 4 characters can be input.
- When the contents in item 2 is not required for display memory, proceed to item 3 after item 1.

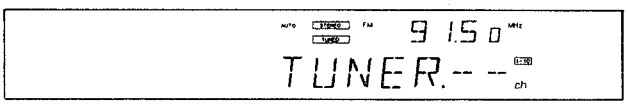
3. Press the preset function key to select "1-10" or "11-20".
4. Press the MEMORY key. (The MEMORY indicator lights.)
5. Press one of the numeric keys: The frequency being tuned in and the station name are stored.

Character input procedure

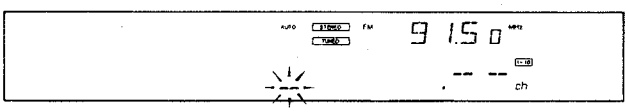
1. Press the CHARACTER button to set the character input mode. The first column of the character display section begins flashing.
2. Press the TUNING UP/DOWN key to select the character.
3. When the desired character is displayed, press the DIGIT key.
   Flashing will shift to the next column.
4. Repeat procedure 3 and 4 for four times to complete inputting. The character input mode will be released.
- Even in the middle of inputting, pressing the CHARACTER key again will release the character input mode. At this time, the data which has been input is valid.

Example 1: To preset the 91.50 MHz FM broadcast and a station name "W N Y" when the station other than the preset channel memories is received.

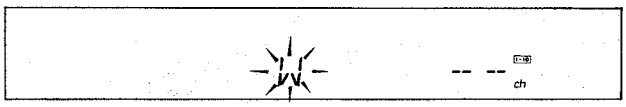
1. Tune to 91.50 MHz FM broadcast.



2. Press the CHARACTER key.

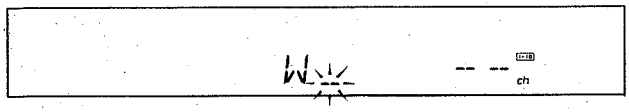


3. Press the TUNING UP key twenty-three time to select "W"
   A→B→C→D→E→F→G→H→I→J→K→L→M→N→O→P→Q→R→S→T→U→V→W

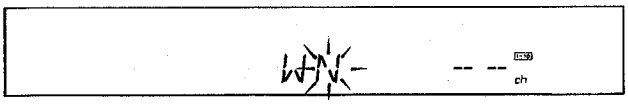


CONTROLS AND INDICATORS

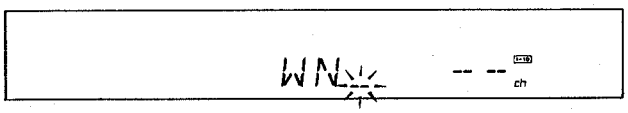
4. Press the DIGIT key.



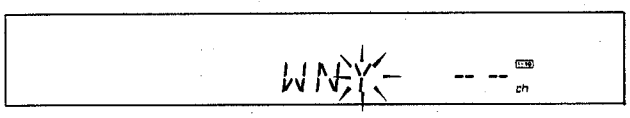
5. TUNING UP key fourteen times to select "N".
_A→B→C→D→E→F→G→H→I→J→K→L→M→N



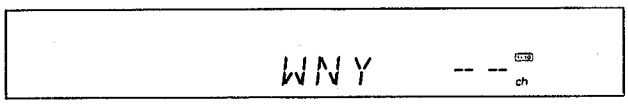
6. Press the DIGIT key.



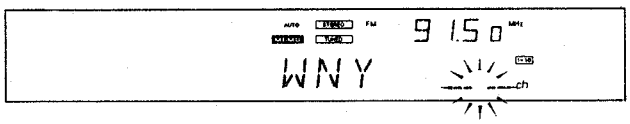
7. TUNING UP key twenty-five times to select "Y".
_A→B→C→D→E→F→G→H→I→J→K→L→M→N→
O→P→Q→R→S→T→U→V→W→X→Y



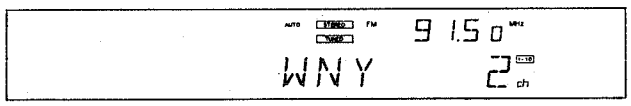
8. As the fourth column should be left blank, press the DIGIT key twice or press the CHARACTER key.



9. Press the MEMORY key.

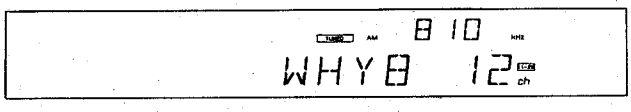


10. Press channel 2 of the preset channels

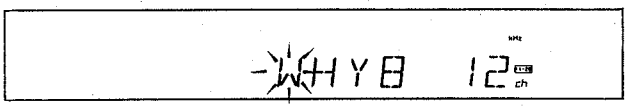


Example 2: To change the station name from "WHY8"" for 810 kHz AM broadcast memorized in 12 preset channel to "W, G, Y".

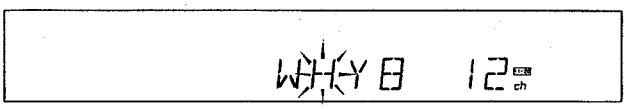
1. Recall the 12 preset channel with the PRESET 1-10/11-20 switch and the PRESET-key according to "Recalling the Preset Memory".



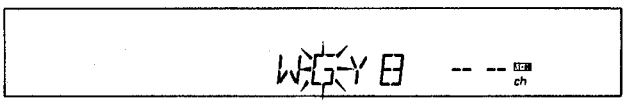
2. Press the CHARACTER key.



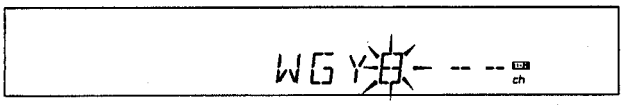
3. Press the DIGIT key to shift the flashing character to the next column since the first character "W" should be left as it is.



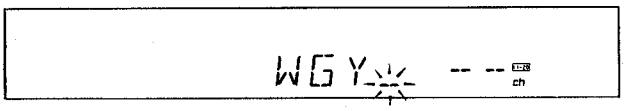
4. Press the TUNING (DOWN) key to select "G".
H→G



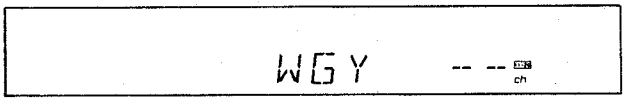
5. Press DIGIT key twice.



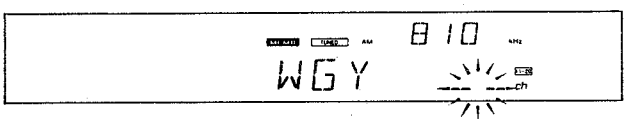
6. Press the TUNING key to select a blank.



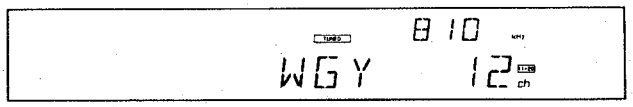
7. Press the DIGIT key or press the CHARACTER key.



8. Press the MEMORY key.



9. Press channel 12 of the preset channels.



CONTROLS AND INDICATORS

■ Listening to a preset station

1. Press the preset function key to select "1-10" or "11-20".
2. Press a numeric key under which memory has been preset.
3. Adjust the VOLUME control to the required listening level and use the graphic equalizer control to adjust the sound to your own preference.

■ Listening to record playing

1. Press the PHONO key of the INPUT SELECTOR switches.
2. Operate the turntable to play back a record.
3. Adjust the VOLUME control to the required listening level and use the graphic equalizer control to adjust the sound to your own preference.

● With a turntable that is connected to this unit with a System Control cord, the convenient System Control operations are available. For details on this, refer to "System Control Operation" on page 20.

■ Listening to the program source connected to the CD or AUX jacks

1. Press the CD or AUX key of the input selector switches.
2. Operate the component connected to the CD or AUX jacks.
3. Adjust the VOLUME control to the required listening level and use the graphic equalizer controls to adjust the sound to your own preference.

● With a CD-player that is connected to this unit with a System Control cord, the convenient System Control operations are available. For details on this, refer to "System Control Operation" on page 20.

■ Tape deck operation

1. Press the appropriate TAPE key of the input selector switches (1 or 2) to select output from a tape deck connected to the TAPE 1 or 2 jacks.
2. Operate the tape deck.
3. Adjust the VOLUME control to the required listening level and use the graphic equalizer controls to adjust the sound to your own preference.

● With a tape deck (connected to the TAPE 1 jacks) that is connected to this unit with a System Control cord, the convenient System Control operations are available. For details on this, refer to "System Control Operation" on page 20.

Note:
When both key (TAPE-1 and TAPE-2) are pressed, TAPE-2 setting has priority.

Recording

1. Press the appropriate key of the INPUT SELECTOR switches.
2. Set up your tape deck(s) for recording and set the recording level with the controls on your tape deck(s).
3. Adjust listening level at the unit to suit your listening preference.

Note:
When a tape deck is connected to this unit with a System Control cord, all of the input selector switches are disabled during recording and do not function until recording is finished. This will prevent the recording from being interrupted.

Tape dubbing

Tape recordings may be duplicated (dubbed) easily using two tape decks connected to the TAPE 1 and 2 jacks.

For example:
(TAPE 1 to 2):

1. Connect two tape decks to the TAPE 1 and TAPE 2 jacks
2. Press the TAPE 1 switch.
3. Play back the recorded tape and adjust the recording levels before starting tape dubbing.

(TAPE 2 to 1):

1. Press the TAPE 2 switch.
2. Press a key except TAPE 1 of the INPUT SELECTOR switches such as AUX.
3. Play back the recorded tape and adjust the recording levels before starting tape dubbing.
4. Do not press the TAPE 1 switch during recording with tape deck 1.

Note:
Adjust record levels on the deck that is making the copy using that deck's operating controls.

CONTROLS AND INDICATORS

■ VIDEO deck operation

Listening to video recorder audio sound

1. Press the appropriate VIDEO (1, 2) key of the INPUT SELECTOR to select output from a video recorder connected to the VIDEO (1, 2) jacks.
2. Operate the video recorder.
3. Adjust the VOLUME controls for your preference.
4. When a video monitor is connected to the VIDEO MONITOR OUT jack on the rear panel, the picture from the recorder can also be monitored.

Dubbing between two VCRs

Video dubbing can be performed while listening to any desired source.
With this set, through dubbing from [VCR 2] to [VCR 1] is possible.
To operate, set the [VCR 1] video deck to record-pause mode and set the [VCR 2] video deck to playback mode. At the same time as the [VCR 2] video deck starts to play, the record-pause mode of the [VCR 1] video deck is released and recording starts.

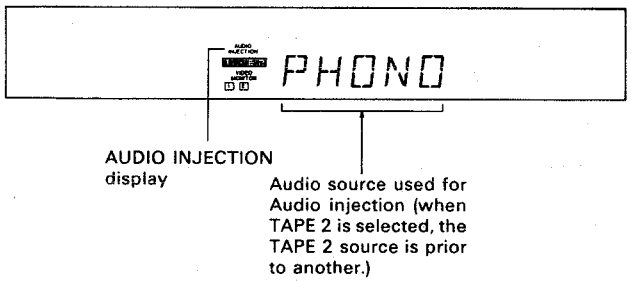
Audio injection

During video dubbing, the sound from the VCR can be replaced with the desired audio source without affecting the picture.
At this, graphic equalizer can be applied to the recording audio source.

1. Press the AUDIO INJECTION switch so that the "AUDIO INJECTION" display is illuminated.
2. Select the desired audio source for Audio injection with the INPUT SELECTOR.
3. When equalizer compensation is required when recording a desired audio source with audio injection ON, press the EQ.REC key.

● The [EQ REC] indicator lights up.
● Set the equalizer controls as desired.

4. Operate each VCR for dubbing.


PHONO
AUDIO INJECTION display
Audio source used for Audio injection (when TAPE 2 is selected, the TAPE 2 source is prior to another.)

■ Graphic equalizer operation

Normal operation

1. Select the desired source.
2. Press the equalizer (EQ. ON) key to ON.

● The [EQ] ON indicator lights up in the display window.

3. Press the equalizer level control UP DOWN keys so that the equalized sound is heard from the speakers as desired.

Preset procedure

Use EQ PRESET key to store equalizer curves in memory or to recall them. (Five different equalizer curves can be stored.)

1. Select the desired source.
2. Press the equalizer (EQ. ON) key to ON.
3. Set the your desired equalizer curve.
4. Press the MEMORY (EQ) key.
5. Press the desired EQ PRESET keys (M-A ~ M-E) to store the equalizer curve.

Preset operation

The preset memory of this unit is available in two types the "PGM" memory in which the user-created desired sound response can be preset, and the "SET" memory in which the factory-preset sound equalizer curves are prepared. Use them by referring to "Characteristics of the SET preset memories".

1. Select SET or PGM.

● The previously selected equalizer curve of the preset channel is displayed.

2. Select preset key

Characteristics of the "SET" preset memories

A: For solid and punchy sound.
B: For effective reproduction of the dynamic movie sound.
C: For easy to listen background music.
D: For musical sound reproduction in a sense of lively
E: For reproducing the vocal music realistically.

EQ REC switch

Press this switch, signals will allow equalized to be recorded on TAPE 1. If you wish to record non-equalized signals with the equalizer switch in the ON position, turn the equalizer recording switch to OFF. This will allow you to hear the equalized signals while recording non-equalized signals.

Note:
The equalized signal is not output at TAPE 2 REC jacks.

CONTROLS AND INDICATORS

■ Surround operation

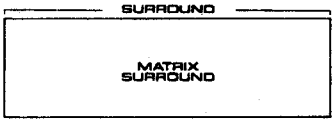
MATRIX SURROUND

Caution:

Before starting operation, be sure to check the following poings:

1. The SPEAKER IMPEDANCE SELECTOR on the rear panel of this unit is set to the "LESS THAN 8Ω" position.
2. Each of the front-channel and rear-channel speaker systems has an impedance of more than 8Ω.

1. Set the SURROUND key to ON.
● The MATRIX SURROUND indication which is marked on the key lights.



2. Select the source which is desired to be expected for surround sound effect, and play it.
3. Adjust the volume control and balance between the front speakers and the rear speakers by controlling the MAIN VOLUME control key.

Note:

1. When the SPEAKER IMPEDANCE SELECTOR on the rear panel is set to the "MORE THAN 8Ω" position, the SURROUND key does not function.
2. If speakers having an impedance of less than 8 ohms are connected, overheating may occur and cause trouble to this unit.

CONTROLS AND INDICATORS

■ System Memory

The required playback condition can be stored in memory for each music program (tape, compact disc, phonograph record (disc) or broadcasting program), so that the same volume level, the same balance (between front and rear channels), and the same equalizer pattern, etc. can be recalled at any time instantly.
Two types of settings can be stored in memory, and by pressing the SYSTEM MEMORY (M-1 or M-2) key you can recall the preset sound field condition instantly.

Stored contents:

The stored contents in the System Memory are as follows:

- O Input selector (CD, PHONO, TUNER, TAPE, VIDEO, etc.)
- O Preset channel in the TUNER position
- O Audio injection
- O EQ. key setting (ON/DEFEAT)
- O EQ. REC key setting (ON/OFF)
- O Preset channel of the equalizer pattern
- O SURROUND setting (ON/OFF)
- O Front-channel volume level
- O Front-channel balance control setting

How to preset the System Memory:

1. Set the playback conditions as required.
- When selecting the tuner or equalizer, be sure to designate the preset channel.
2. Press the SYSTEM MEMORY key.
- The display shows "SYS M-" for about 5 seconds.
- When "SYS M" is blinking in the display, the tuner or equalizer pattern is not preset in memory.
  After presetting the playback condition for each channel, press the MEMORY key again.

How to recall System Memory:

1. Press the M-1 or M-2 key.
- The display shows "SYS M-1" or "SYS M-2" for about 1 second, and the settings of each section are changed to the preset contents.
2. Readjust the setting of each section as required.
- When PHONO is selected for the input selector, with a system-controlled turntable connected, the turntable will automatically start playing by recalling the System Memory. Therefore, be sure to set the record on the platter of the turntable before activating the System Memory function.
- In the same way, when a system-controlled tape deck or CD player is connected to this unit, the tape deck or CD player can be started automatically by activating this System Memory function.

Note:

1. Do not set the volume controls to an excessively high volume level. It may not only astonish the listener, but it may also damage the speaker or amplifier.
2. If the contents of the preset channel is changed after designating the tuner or equalizer section channel for System Memory, the contents of the System Memory channel will also be changed.

■ System control operation

Connection

Using the system control cord provided with the system component models as below, make connections as shown on page 7.

The following models are available for the system control operations.

Turntable:	**KD-77F, KD-67F or KD-47F**
Cassette deck:	**KX-97CW, KX-77CW KX-67W or KX-87CR**
CD player:	**DP-87, DP-57, DP-47, DP-M107R, DP-M97 or DP-M97R**

Note:

Some models provide two or three system control jacks. However, when used with this receiver, be sure to connect the system control cord to the jack having a indication of ①.

Operation

1. Automatic play operation

When starting play with the turntable, cassette deck or CD player connected to the receiver, press the desired INPUT SELECTOR switch on the receiver. The turntable, cassette deck or CD player will automatically enter the play mode.
In the same way, pressing the Play key of the turntable, cassette deck or CD player will automatically switch the INPUT SELECTOR on the receiver to the equipment on which the Play key is pressed.

2. Synchro recording

To record the sound from the turntable or CD player onto the tape with the cassette deck, press the PLAY (START) key of the turntable or CD player. The cassette deck will start recording automatically, synchronized with the turntable or CD player starting play. For more details, refer to the instruction manual of the cassette deck.

3. Remote control

When the remote control unit provided with this unit, to which the turntable, cassette deck or CD PLAYER is connected, is equipped with related control keys, the related components can be controlled using these keys.

Note:

During recording with the cassette deck, the INPUT SELECT on the receiver is fixed at the source from which the recording is made, by the system control circuit. At this time, pressing any of the INPUT SELECTOR keys does no function even when it is pressed.

CONTROLS AND INDICATORS

■ Operations

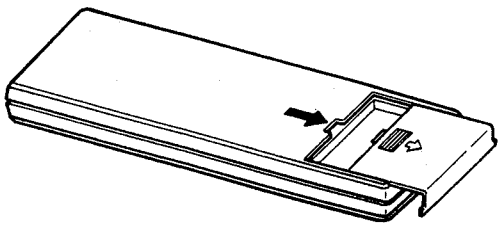
1. Connect the power plug of this unit to an AC outlet.
- This main frame enters the power standby mode and the POWER STANDBY indicator lights.
2. Press the POWER key of remote control unit or the POWER switch of this unit.
- This unit enters the power ON mode.
3. Operates with the keys of remote control unit.

Note for remote control operation

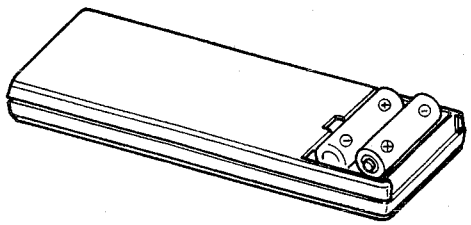
After pressing one of operation keys, when the next operation is required, press the next operation key firmly after approx. 1 second interval.
When the next operation key is pressed immediately after the previous key, it may cause misoperation.

■ Installing the battery on the remote control unit

1. Remove the battery compartment cover.



2. Insert two size "AA" (R6) batteries confirming the correct polarity and close the cover in its place.



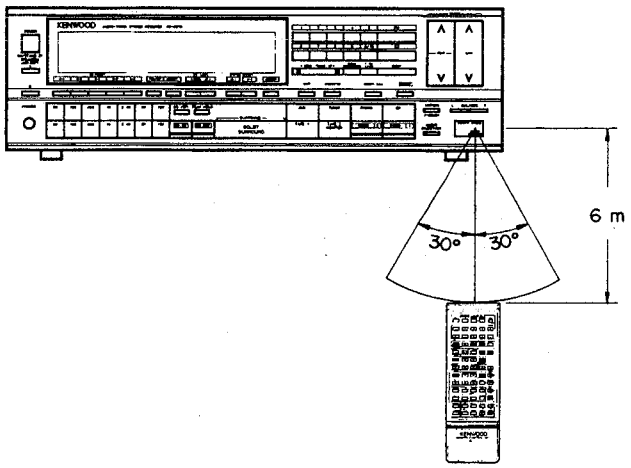
Note:

The provided batteries are to be used for operation of the remote control unit, and it may have shorter life. When the remote unit becomes effective only for shorter distance on dose not effective to operate, replace them with two new batteries.

■ Usable range of remote control unit

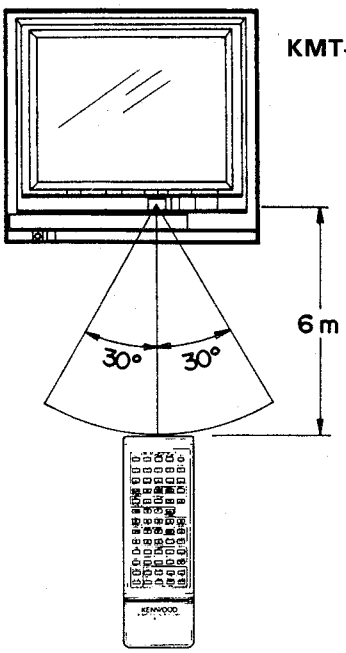
The usable range of the remote control unit may differ on temperature, humidity or using conditions, however, it is defined approximately as shown in the figure below:

For controlling audio



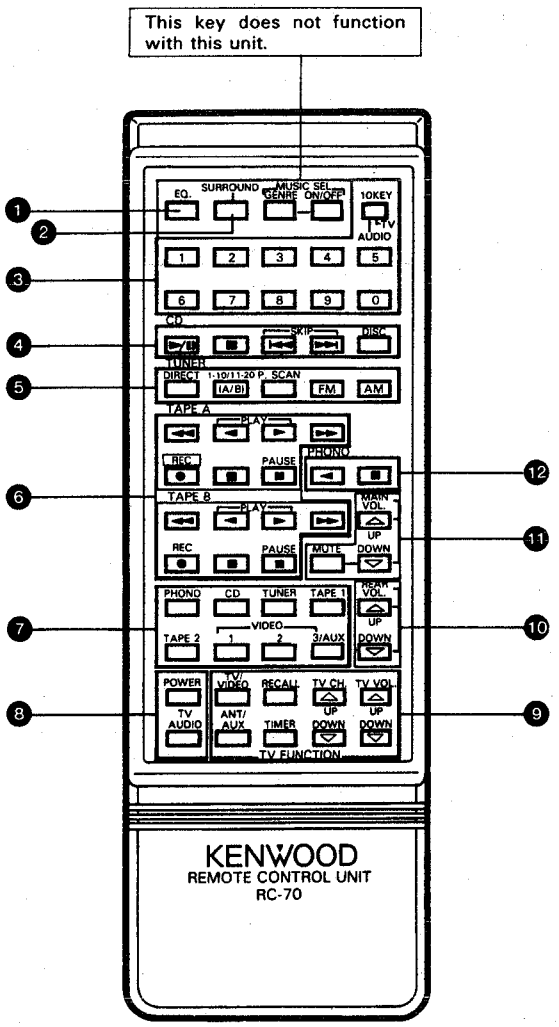
For controlling TV set

KMT-1026/KMT-2026S

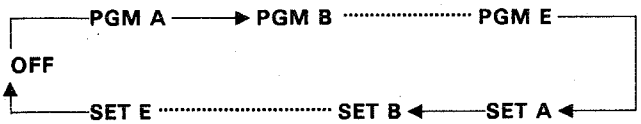


CONTROLS AND INDICATORS

■ Control keys



❶ Equalizer preset keys (EQ)
The 5 "PGM" presets and the 5 "SET" presets–total of 10 equalizer preset patterns can be recalled sequentially.

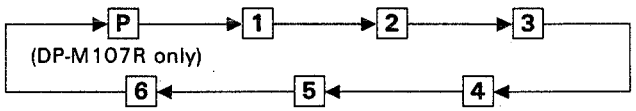


❷ Surround key
This key is used to turn the surround system ON or OFF.

❸ 10-KEY
AUDIO: 10-key direct operation is possible only for tuner and CD player.
(For example: When "7" is pressed while listening to track No. 4 of CD player, the track No. is changed to 7.)

TV: 10-key direct operation is possible only for TV. Use buttons "0-9" in combination for direct channel selection regardless of any previous memory settings or functions. Generally, key in channel numbers in two digits for speedy operation. To key in lower channel numbers from 2-9, key in "0", then the channel number. (For example, to tune in channel 9 directly, key in "0", then "9", for channel 23, key in "2", then "3", etc.) (U.S.A. only)

❹ Compact disc player (DP-87/DP-57/DP-47/DP-M107R/DP-M97R/DP-M97) operation keys (CD)
Play/pause key (▶/❚❚)
When this key is pressed with a compact disc loaded in the compact disc player, the disc is played. (Same function as the play key on the compact disc player.)
When this key is pressed during play, the player enters the pause mode. To release pause mode, press it again.
Stop key (■)
Press to cancel all operations. The pickup returns to the beginning of the first tune and the player enters the standby mode. (Same function as the stop key on the compact disc player.)
Music skip key (▶▶|)
Press to skip to the beginning of the next tune. The pickup is advanced to the forward tunes by the number of times it is pressed. (Same function as the music skip key on the compact disc player.)
Music skip key (|◀◀)
Press to return to the beginning of the current tune. Pressing it again returns the pickup to the beginning.
When the key is continuously pressed, the pickup returns to the backward tunes by the number of times it is pressed. (Same function as the music skip key on the compact disc player.)
DISC select key
When a multiple CD player (DP-M107R, DP-M97R, DP-M97)is connected, this key selects one of six CDs sequentially in a cycle.



❺ Tuner operation keys (TUNER)
Direct
When this key is pressed, the unit is set to direct mode and the frequency of the desired station can directly be input using 10-key.
1 ~ 10/11 ~ 20 (A/B)
Each time this button is pressed, the preset station range is changed.
P. SCAN
When this key is pressed, the preset station are automatically received from A-1 for a specified time.
Band select keys (FM/AM)
Select the desired band for broadcast listening.
(Same function as the band selector on the tuner)

CONTROLS AND INDICATORS

❻ Cassette deck operation keys (KX-97CW, KX-77CW, KX-67W ..... TAPE A/B) (KX-87CR ..... TAPE B only)

Stop key (■)
Press to stop tape running.
Rewind key (◀◀)
Press to fast-wind the tape to the left reel.
Fast-forward key (▶▶)
Press to fast-wind the tape to the right reel.
Reverse Play key (◀)
Press to start playback in reverse direction. (Rear side playback)

Play key (▶)
Press to start playback in forward direction. (Front side playback)
Pause key (II)
Press to stop play back or recording momentarily.
The function of the PAUSE key.
Record key (REC) (●)
Press to start recording.

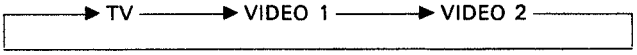
❼ Input selector keys
PHONO: To listen to a source from the turntable connected to the PHONO jacks, press this switch.
CD: To listen to a source from the CD player connected to the CD jacks, press this switch.
TUNER: To listen to a source from the tuner connected to the TUNER jacks, press this switch.
TAPE-1: To listen to a source from the tape deck connected to the TAPE 1 jacks, press this switch.
TAPE-2: To listen to a source of the tape deck, etc., connected to the TAPE 2 jacks, press this switch.
VIDEO 1: To listen to a source from the equipment connected to the VIDEO 1 jacks, press this switch.
VIDEO 2: To listen to a source from video cassette recorder connected to the VIDEO 2 jacks.
VIDEO 3/AUX: To listen to a source from the equipment connected to the AUX jacks.

❽ POWER switch
Press to turn the power on for whole system.
AUDIO: Press to turn the stereo system ON. Press again to turn the stereo system OFF.
TV (KMT-1026, KMT-2026S): Press to turn the TV ON. Press again to turn the TV off.

❾ TV (KMT-1026, KMT-2026S) operation keys (TV FUNCTION) (U.S.A. only)

Note: With the supplied remote control unit, only KMT-1026, KMT-2026S (monitor TV) can be operated.

TV/VIDEO key
Use this key to select the type of signal that the monitor will receive: TV, VIDEO 1 or VIDEO 2.
RECALL key
Press the recall key and both the time and channel will be displayed continuously. Press it again and they will disappear. The timer function can be utilized as well but the time will not continuously be displayed.
Channel tuning UP/DOWN keys (TV CH.) (△/▽)
Press the channel up (△) key to tune in higher channels, and the channel down (▽) key to tune in lower channels. Press the key continuously until the channel number you wish to receive appears on the upper right side of the screen.
ANT/AUX key
Press this key to set the ANT and AUX indicator to agree with the antenna input source.



Note:
Switching between TV and VIDEO etc., described above is not related to the function of this reciver should be effectuated or the TV set.

TIMER key
Press the timer key to set desired time.
TV VOL. keys (UP△/DOWN▽)
Apply steady pressure to the VOLUME UP or DOWN buttons, to increase or decrease the volume as desired.

❿ REAR VOL. keys (UP△/DOWN▽)
Apply steady pressure to the REAR VOLUME UP or DOWN key to increase or decrease the volume as desired.

⓫ Volume control keys (MAIN VOL.) (UP△/DOWN▽)
Controls the volume of the speakers and headphones. Press the UP (△) key to increase the volume level and, press the DOWN (▽) key to decrease it.
Muting key (MUTE)
Press to decrease the volume level instantaneously. Pressing it again resumes the previous volume level. When this key is pressed, volume level is decreased. The MUTING indicator blinks.

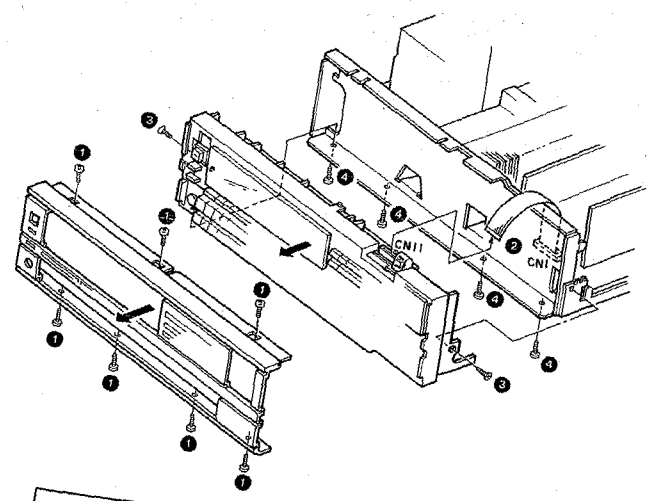
⓬ Turntable operation keys (PHONO)
Play key (◀)
Press to start record play automatically.
For KD-67F, select the record size, before starting play with this key.
Stop key (■)
Press to stop play; the tonearm returns to the rest and the platter stops rotating.

KR-V77R

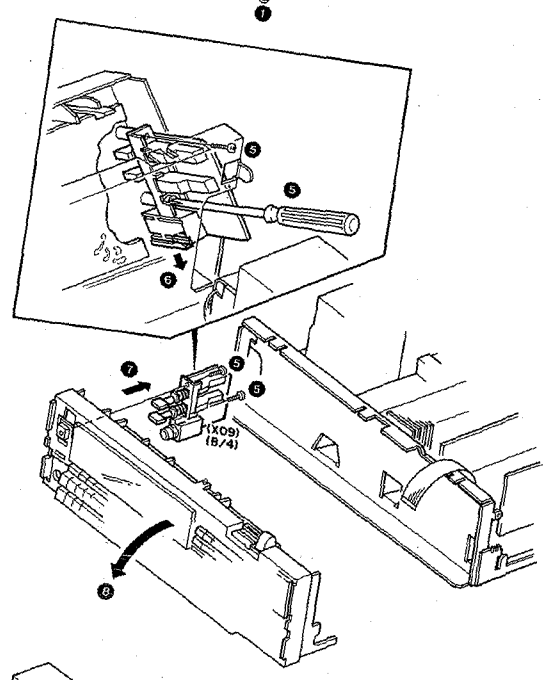
DISASSEMBLY FOR REPAIR

Remove the case prior to the following operations.

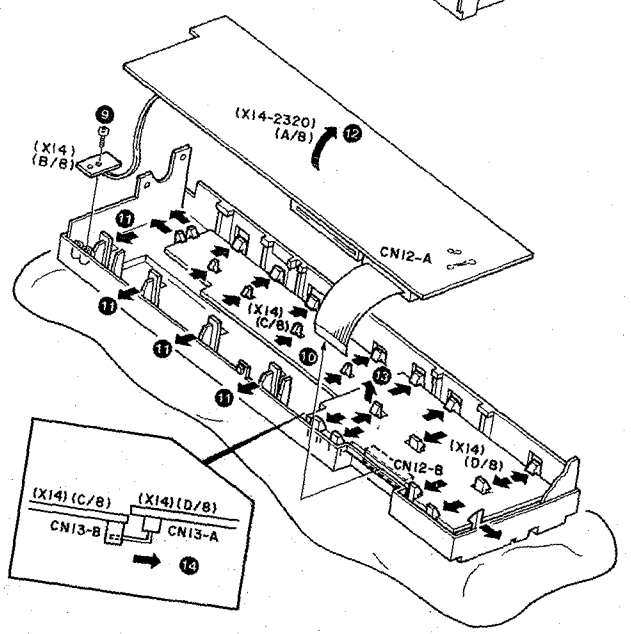
1. Remove the 3 screws from the upper side of the front panel, and the 4 screws from its lower side (❶), and then take off the front panel.
2. Disconnect the parallel cable from CN11 (❷), and remove the 2 screws (❸) on the side of the sub-panel. Then, remove the 4 screws (❹) retaining the sub-panel from its bottom, and tilt the sub-panel slightly in the direction of the arrow.



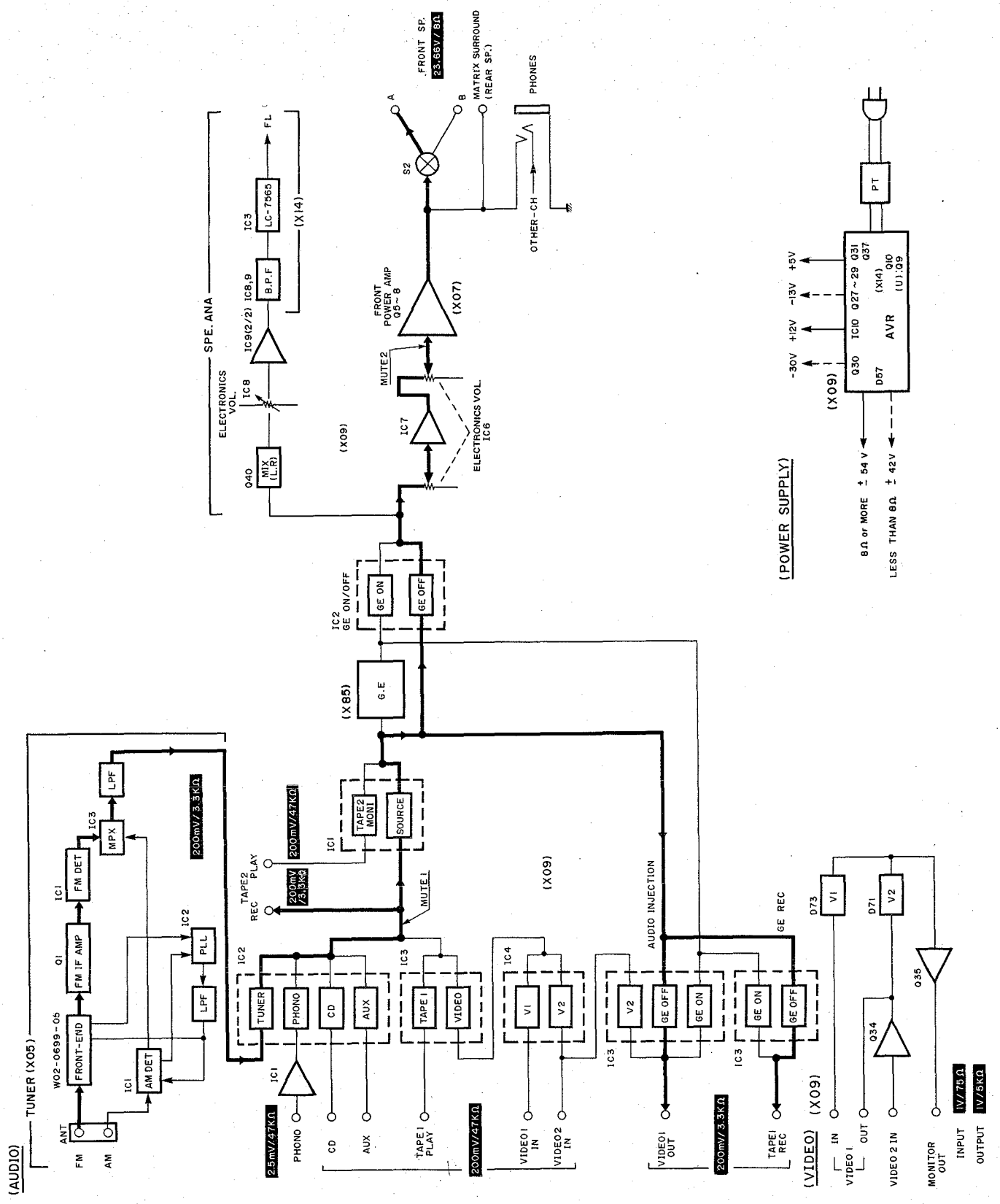
3. Remove the 2 screws (❺) holding the (X09-) (B/4) PC board to the rear of the chassis, disengage the claw (❻) below the PHONES jack, and then take out the PC board in the direction of the arrow (❼).
4. Tilt the sub-panel in the direction of the arrow (❽). (To prevent damage to the sub-panel, place a cloth under it.)



5. Remove the screw (❾) holding the (X14-) (B/8) PC board, and then take out the PC board.
6. Disengage the parallel cable (❿) from CN12-B, disengage the 4 claws (⓫), and then take out the (X11-2320) (A/8) PC board in the direction of the arrow (⓬).
7. Disengage the 21 claws retaining the (X14-) (C/8) and (X14-) (D/8) PC boards, and then take out both PC boards together in the direction of the arrow (⓭). (The two PC boards are coupled via connectors.)
8. When it is required to separate the (X14-) (C/8) and (X14-) (D/8) PC boards, disconnect the connectors in the direction of the arrow (⓮).



BLOCK LEVEL DIAGRAM



CIRCUIT DESCRIPTION

Description of Companents

TUNER UNIT (X05-353X-XX) 0-10 : K, P 0-81 : U, UE

Component	Use/Function	Operation/Condition/Compatibility
Q1	FM IF amp.	
Q2, 3	LPF (Low Pass Filter)	
Q5, 6	Emphasis select	75μs when ON, 50μs when OFF.
Q7, 8	+B power supply select	Q7 : FM + B (ON in FM mode), Q8 : AM + B (ON in AM mode).
IC1 (LA1265)	FM IF/AM detection	
IC2 (LM7001)	PLL (Phase Locked Loop)	
IC3 (AN7470)	MPX (Multiplexer)	

POWER AMPLIFIER UNIT (X07-2360-12)

Component	Use/Function	Operation/Condition/Compatibility
Q1 ~ 4	Primary stage voltage amp.	
Q5 ~ 8	Secondary stage voltage amp.	
Q9, 10	Secondary stage current mirror	
Q11 ~ 14	Power amp. driver	
Q15, 16	Protection current detection	
Q17	Protection	
Q18, 19	Protection current detection	

AUDIO UNIT (X09-265X-XX) 0-11 : K, U, UE 1-02 : P

Companent	Use/Function	Operation/Condition/Compatibility
Q1, 2	Muting	For MUTE 1.
Q3, 4	Muting	For MUTE 2.
Q5 ~ 8	Final transistor	
Q9, 10	For bias compensation	
Q23	Transistor switch	Turns ON when the 4Ω/8Ω switch is set to 8Ω, to turn Q24 ON.
Q24	Transistor switch	Turns ON when Q21 is ON or Q23 is ON, to turn Q25 OFF. Compatible with 2SC1740S.
Q25	Transistor switch	Drives Q26 to turn the output relay and the surround output relay ON and OFF.
Q26	Relay drive transistor	Driver transistor for the output relay and the surround output relay.
Q27 ~ 29	Constant voltage circuit	For the −12V power supply.
Q30	Constant voltage circuit	For the −30V power supply.
Q31	−30V ON/OFF switch	Turns ON immediately after power ON, and when power is OFF, to turn the −30V OFF.
Q32	Muting driver	Turns Q1 and Q2 ON/OFF. Compatible with 2SA933S.
Q33	Muting driver	Turns Q3, Q4 and Q11 ON/OFF. Compatible with 2SA933S.
Q34	Video buffer for REC OUT	
Q35	Video buffer for MONITOR OUT	
Q36	Surround ON/OFF switch	Turns ON when surround mode is engaged to turn Q11 OFF. Compatible with 2SC1740S.
Q37	Surround lamp driver	Turns ON when surround mode is engaged.
Q38	Switch for VIDEO 1	Turns ON when VIDEO 1 is selected to select IC4.
Q39	Switch for VIDEO 2	Turns ON when VIDEO 2 is selected to select IC4.
Q40	MONO/ST select switch	Turns ON when MUTE 1 is at a high level, or when forced MONO is selected. Compatible with 2SC1740S.
Q41	Muting for the CLK	Cuts the CLK line except when the CLK for the tuner is at a high level.
Q42	Muting for DATA	Cuts the DATA line except when the CLK for the tuner is at a high level.
Q43	Ripple filter	For Tuner unit (X05-).

CIRCUIT DESCRIPTION

Component	Use/Function	Operation/Condition/Compatibility
IC1 (NJM4558D-A)	Equalizer amp.	
IC2 (TC9164N)	Selector	SOURCE select, TAPE 2 select, GE (Graphic Equalizer) ON/OFF select.
IC3 (TC9162N)	Selector	GE REC select, AI (Audio Injection) select.
IC4 (LC4966)	Selector	VIDEO 1/2 select.
IC5 (NJM4558D)	Buffer amp. for VIDEO 1 and REC OUT	Compatible with M5218P.
IC6 (TC9176P)	Electronic VR	Front speaker volume.
IC7 (NJM4558D-A)	Buffer amp. for the electronic VR	Compatible with NJM4560D.
IC8 (TC9176P)	Electronic VR	For the surround amp., for the spectrum analyzer level.
IC9 (NJM4558D)	Buffer amp. for the electronic VR	Compatible with M5218P.
IC10 (μPC7812HF)	Constant voltage power supply	3-pin regulator for the +12V constant voltage power supply.

DISPLAY UNIT (X14-232X-XX) 0-11 : K, P 0-82 : U, UE

Component	Use/Function	Operation/Condition/Compatibility
Q1	Reset circuit	
Q2	FIP grid current buffer	
Q9, 10	5V power supply	
Q11 ~ 13	Relay driver circuit	
Q15, 17	LED driver circuit	Positive logic.
IC1 (μPD75108CW-200)	Microprocessor	
IC2 (μPD6330C)	Static driver	FIP driver.
IC3 (LC7565)	Spectrum analyzer display driver	FIP driver.
IC4 ~ 7 (μPA80C)	Transistor array	FIP driver (Negative logic).
IC10 (μPD4081BC)	Data mute	Data transfer select for the VOL IC and SW IC.
IC14 (PST529C)	Reset IC	

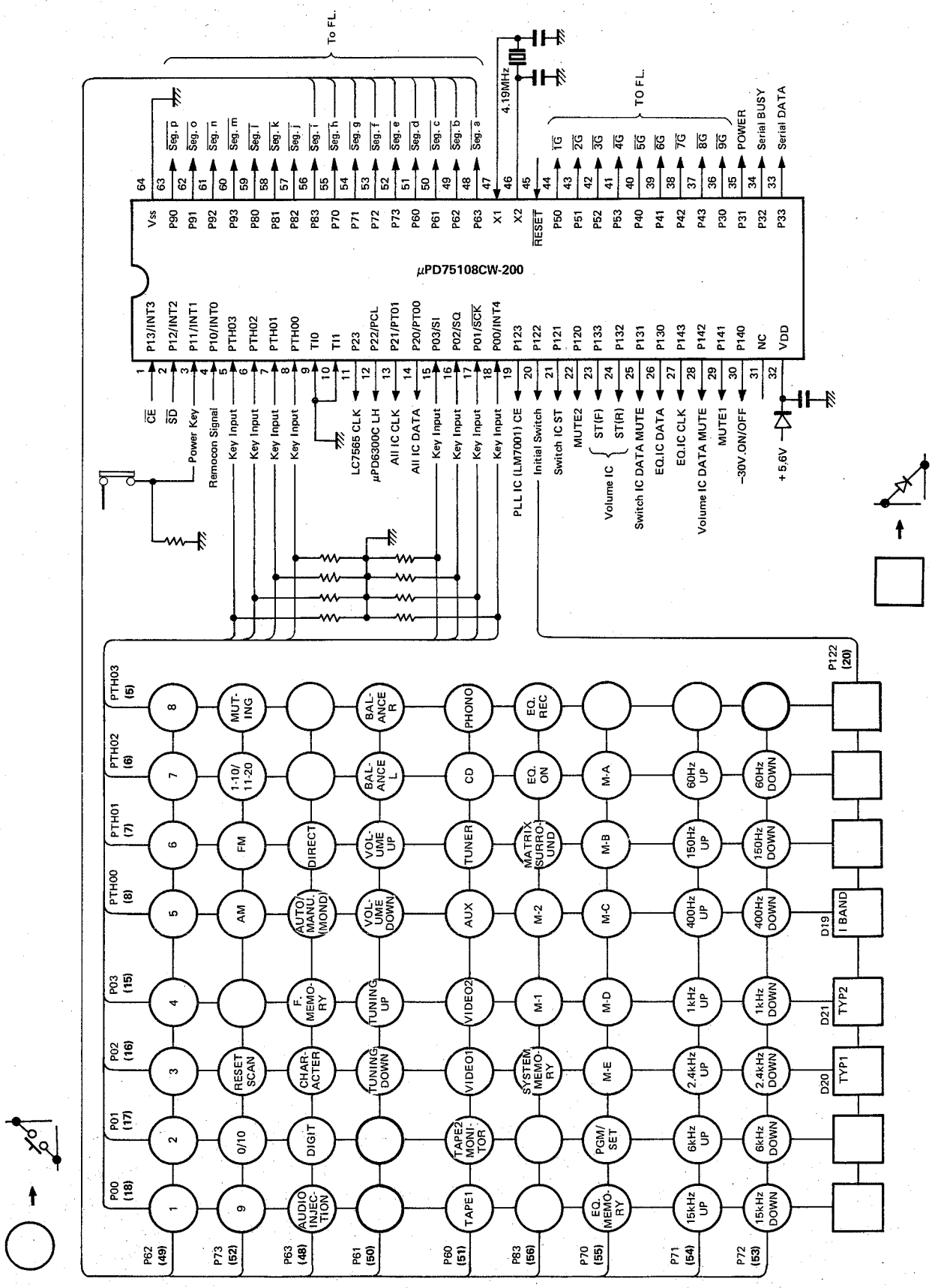
EQUALIZER UNIT (X85-1120-10)

Component	Use/Function	Operation/Condition/Compatibility
IC1 (LC7522)	Electronic VR array for the graphic equalizer	
IC2, 3 (M5229P)	Op-amp. for the graphic equalizer	Semiconductor inductor x 7.

CIRCUIT DESCRIPTION

Microprocessor : μPD75108CW-170 or -200 (X14-2320-11 : IC1)

Terminal connection



CIRCUIT DESCRIPTION

- **Version /Model Set up**

Setup of the version of the model for each area is performed by the initial setup diode matrix.
Set to "1" when diode is provided, or "0" when not provided.

1) Version setup switch

Version set up switch	Band	Receiving frequency range	Channel spacing	Reference frequency
0	FM	87.5 ~ 108.0MHz	100kHz	50kHz
	AM	530 ~ 1610kHz	10kHz	10kHz

2) Model setup switch (TYP1, TYP2)

Model setup switch		Model	Function		
TYP1	TYP2		Dolby surround	Speaker matrix	Spectrum amalyzer display (SPI)
1	1	KR-V87 (K)	O	X	O
1	0	KR-V77 (K)	X	O	X
0	1	KR-V87 (E)	X	X	O

O : Available, X : Not available

- **Switch IC** CLK (15), DATA (14), ST (13)

	S1	S2	S3	S4	S5	S6	S7	S8
TC9164N	CD	AUX	PHONO	TUNER	TAPE 2 OFF	TAPE 2 ON	EQ OFF	EQ ON
TC9162N	EQ REC OFF	EQ REC ON	AUDIO INJECTION EQ REC ON	AUDIO INJECTION EQ REC OFF	TAPE 1	VIDEO 1 VIDEO 2	$\overline{AI}$	–
	Open when TAPE 1 is turned ON.		Open when A.I. is turned OFF.					

- **Static Driver IC : μPD6300C** CLK (12), DATA (11), LH (10)

Output	O0 (15)	O1 (16)	O2 (17)	O3 (18)	O4 (19)	O5 (20)	O6 (21)	O7 (22)	O8 (23)	O9 (24)
Display	ch.	11-20	1-10	AM, kHz	FM, MHz				AUTO	DEFEAT
Terminal	S1 (24)	S2 (25)	S3 (26)	S4 (29)	S6 (31)	S7 (34)	S8 (35)	S9 (36)	S12 (39)	S13 (41)
Output	O10 (25)	O11 (26)	O12 (27)	O13 (1)	O14 (2)	O15 (3)	O16 (4)	O17 (5)	O18 (6)	O19 (7)
Display	ON	AUDIO INJECTION	VIDEO [1]	VIDEO [2]	TAPE 2		VOLUME V	VOLUME Λ		SURROUND
Terminal	S14 (42)	S15 (43)	S17 (45)	S18 (46)	S16 (44)		LED	LED		LAMP
						Positive logic is used.				

- **PLL IC : LM7001** CLK (2), DATA (4), CE (3)

	$\overline{BO1}$ (7)	$\overline{BO3}$ (9)
FM	1	0
AM	0	1
Except TUNER	0	0

	$\overline{BO2}$ (8)
AUTO	0
MONO	1

0 : Short, 1 : Open

- **Volume IC : TC9176P** CLK (8), DATA (9), ST (10)

The FRONT volume control uses the same IC with reversed L/R channel connections.
The R-channel of the rear volume control is also used to control the Surround (rear-channel) speaker, while the L-channel is used to control the SPI (Spectrum Peak Indicator) level.

- **Equalizer IC : LC7522**

S (13) : VEE, CLK (17), DATA (16)
f7 = 60Hz, f1 = 15kHz

- **EQ./SPI display IC : LC7565**

S1 (15), S2 (16) : VDD, CLK (18), DATA (17)
f7 = 60Hz, f1 = 15kHz

CIRCUIT DESCRIPTION

● **Terminal functions**

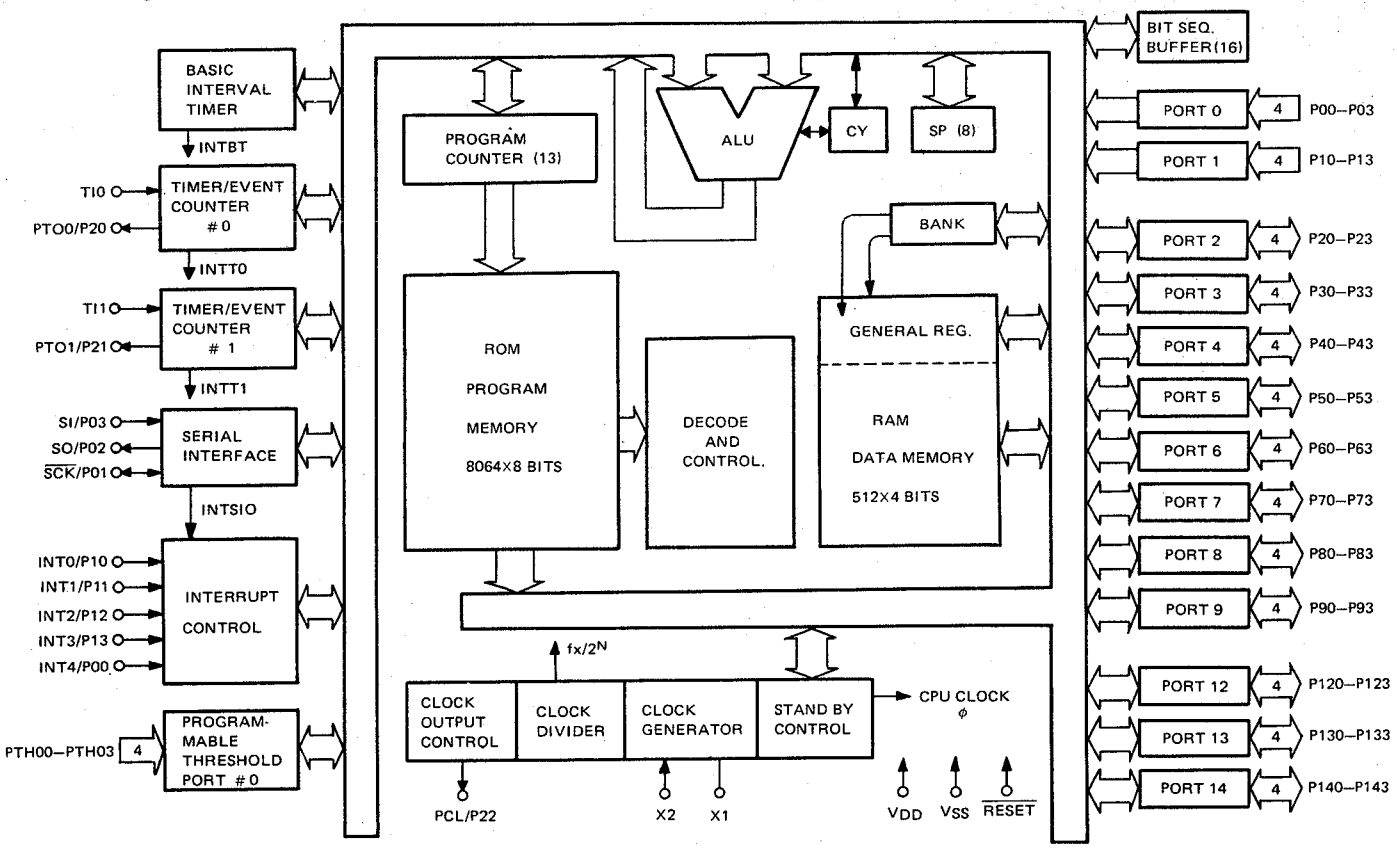
Pin No.	Pin name	I/O	Name	Description
1	P13/INT3	I	CE	Backup detection pin. When this goes low level, backup mode is set and the clock stops.
2	P12/INT2	I	SD	Station presence/absence detection signal input pin : Used in Auto Tuning and Preset Scan. High : Station is not present, Low : Station is present.
3	P11/INT2	I	Power Key	Key ON when high level at power key input terminal.
4	P10/INT0	I	Remocon Signal	Remote control signal input pin after detection : Inputs the remote control signal level in normal mode and when reading out the leader code. Detects the signal by interruption the rising edge when reading the data.
5 ~ 8	PTH03 ~ PTH00	I	Key Input	Key matrix return signal input : Normally high. (Threshold voltage = V_{DD} x 7.5/16, Conversion time : 32.3μs.)
9, 10	TI0, TI1	I	Not used	No-connection input pin. Fixed at V_{DD} or V_{SS}.
11	P23	O (CMOS)	LC7565 CLK	Output pin to be connected to the CLK pin of LC7565. Normally low.
12	P22/PCL	O (CMOS)	Static Driver (μPD6300C)	LH signal output pin for the Static Driver IC (μPD6300C). Normally low, and high when data is output.
13	P21/PTO1	O (CMOS)	CLK	CLK signal output pin for μPD6300C, TC9162N, TC9164N, TC9176P and LM7001. TC9176P, TC9162N and TC9164N are not directly connected to the CLK pin of each IC. For TC9176P, the VOL IC DATA MUTE signal ANDed with the signal from the CLK pin are input to the IC. For TC9162N and TC9164N the switch IC DATA MUTE signal ANDed with the signal from the CLK pin are input to the IC.
14	P20/PTO0	O (CMOS)	DATA	DATA signal output pin for μPD6300C, TC9162N, TC9164N, TC9176P and LM7001. In the same way as the CLK signal, each DATA MUTE signal is ANDed with this signal and input to the IC for TC9176P, TC9162N and TC9164N.
15 ~ 18	P03/SI ~ P00/INT4	I	Key Input	Key matrix returns signal input pin : Normally high.
19	P123	O (N ch open drain)	PLL IC (LM7001) CE	CE signal output pin for the PLL IC (LM7001). Normally low, and high when data is output.
20	P122	O (N ch open drain)	Diode Switch Intake Signal	Strobe signal for the diode switch intake. Goes low momentarily immediately after Preset, after then it is always high.
21	P121	O (N ch open drain)	Switch IC (TC9162N, TC9164N) ST	ST signal output pin for the switch ICs (TC9162N and TC9164N). Normally low, and high when data is output in a monent. The microprocessor signal is input to the ST pin after differentiating.
22	P120	O (N ch open drain)	MUTE2	With the volume level of the front channel set to between 0 and –28dB, outputs the muting signal for a short period (about 10msec.) when the TAPE 2 ON/OFF, EQ ON/OFF, EQ REC ON/OFF, surround ON/OFF, AUDIO INJECTION ON/OFF or input selector is switched. When the volume level of the front channel is set to – ∞dB, outputs the muting signal.
23	P133	O (N ch open drain)	VOL IC ST (FRONT)	ST signal output pin of the Front IC for Vol. IC TC9176P. Normally low : Goes high momentarily when data is output. High when power is OFF.
24	P132	O (N ch open drain)	VOL IC ST (REAR)	ST signal output pin of the Rear IC for Vol. IC TC9176P. Normally low : Goes high monentarily when data is output. High when power is OFF.
25	P131	O (N ch open drain)	Switch IC DATA MUTE	Output pin for the signal which makes the DATA or CLK signal output from P21 and P20, so that the other IC does not input to the switch IC. This signal ANDed with the signal from P21, P20 are input to the Switch IC. High when power is OFF.
26	P130	O (N ch open drain)	EQ IC (LC7522) DATA	DATA signal input pin of EQ IC LC7522. High when power is OFF.

CIRCUIT DESCRIPTION

Pin No.	Pin name	I/O	Name	Description
27	P143	O (N ch open drain)	EQ IC (LC7522) CLK	CLK signal input pin of EQ IC LC7522. High when power is OFF.
28	P142	O (N ch open drain)	VOL IC DATA MUTE	Output pin for the signal which makes the DATA or CLK signal output from P21 and P20, so that the other IC does not input to the Vol. IC. This signal ANDed with the signal from P21, P20 are input to the Switch IC. High when power is OFF.
29	P141	O (N ch oepn drain)	MUTE1	Muting signal during tuner scanning when the input selector is changed. Normally low : Active high. High when power is OFF.
30	P140	O (N ch open drain)	−30V ON/OFF	−30V ON/OFF control signal output pin to light the EQ/SPI display and other display sections simultaneously. A high level signal is output about 500ms after the POWER pin (P31) goes high. Low when power is OFF.
31	NC			
32	V_{DD}			Power supply pin.
33	P33	I/O (CMOS)	Serial DATA	DATA pin for system serial communication. Normally in input mode, and in output mode only when serial data is output.
34	P32	I/O (CMOS)	Serial BUSY	BUSY pin for system serial communication. Normally in input mode. Outputs a high level signal when serial data is output. Also provides the serial bus control function.
35	P31	O (CMOS)	POWER	Output pin for the power relay control : Active high. This is controlled by the POWER key. It alternates between high (Power ON) and low (Power OFF) each time the POWER key is pressed.
36	P30	O (CMOS)	$\overline{9G}$	FL digit control pin. Negative logic. Drives the FL display through an inversion buffer.
37	P43		$\overline{8G}$	
38	P42		$\overline{7G}$	
39	P41		$\overline{6G}$	
40	P40		$\overline{5G}$	
41	P53		$\overline{4G}$	
42	P52		$\overline{3G}$	
43	P51		$\overline{2G}$	
44	P50		$\overline{1G}$	
45	$\overline{RESET}$	I		Input pin for the reset signal from the microprocessor.
46	X2			System clock oscillator pin (4.194MHz).
47	X1			
48	P63	O (CMOS)	$\overline{Seg\ a}$, Key	FL segment control pin. Negative logic. Drives the FL display through an inversion buffer. Key intake strobe signal output pin. Intakes each key press one by one during the display blanking period.
49	P62		$\overline{Seg\ b}$, Key	
50	P61		$\overline{Seg\ c}$, Key	
51	P60		$\overline{Seg\ d}$, Key	
52	P73		$\overline{Seg\ e}$, Key	
53	P72		$\overline{Seg\ f}$, Key	
54	P71		$\overline{Seg\ g}$, Key	
55	P70		$\overline{Seg\ h}$, Key	
56	P83		$\overline{Seg\ i}$, Key	
57	P82		$\overline{Seg\ j}$	
58	P81		$\overline{Seg\ k}$	
59	P80		$\overline{Seg\ l}$	
60	P93		$\overline{Seg\ m}$	
61	P92		$\overline{Seg\ n}$	
62	P91		$\overline{Seg\ o}$	
63	P90		$\overline{Seg\ p}$	
64	V_{SS}			GND pin.

CIRCUIT DESCRIPTION

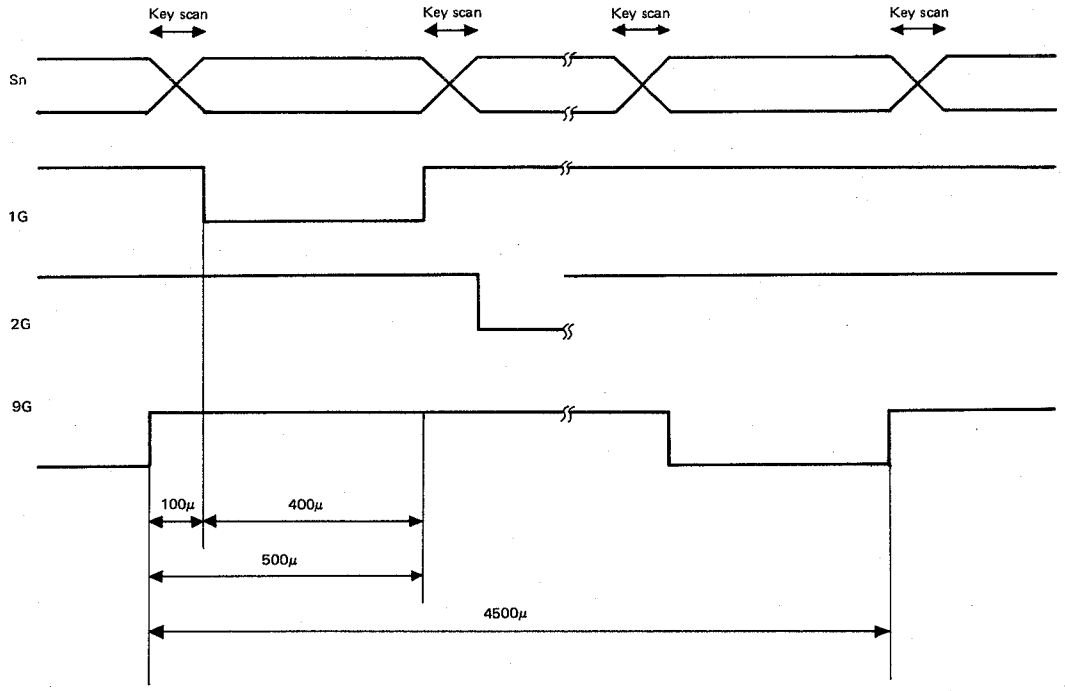
Block diagram



CIRCUIT DESCRIPTION

• Display Driver

The BG-526GK display is driven by attaching the inversion port to the output port of microprocessor μPD75108CW. The time chart is as follows :



ON Time : 400μsec
Blanking period : 100μsec
DUTY = 1/11.25
Scanning frequency : 222Hz

• Initial Status

1) Contents of the initial status

Function	Status
Amplifier (AMP) section	
AUDIO SELECTOR	TUNER
TAPE 2 MONITOR	OFF
VIDEO SELECTOR	VIDEO 1
VOLUME	−56dB
REAR VOLUME	±0dB
BALANCE	CENTER
AUDIO INJECTION	OFF
SURROUND	OFF
Equalizer (EQ) section	
EQ MEMORY MODE	PGM
EQ MEMORY PRESET	Not in PRESET recall status.
EQ	±0dB FLAT
EQ PGM MEMORY	±0dB FLAT
EQ ON/DEFEAT	DEFEAT
EQ REC ON/OFF	OFF
Display mode	SPI
Tuner section	
Receiving frequency	Lower limit of the FM frequency range.
TUNING MODE	AUTO
1-10/11-20	1-10
Power supply	OFF

2) Initial status setup

Setting of the initial status will be performed in a following cases :

1. When the memory contents backed up has been caccelled.
2. When the power cord is plugged into the AC outlet while the MEMORY key on the tuner is being depressed.

ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION			SELECTOR: FM				
1	DETECTOR	(A) 98.0MHz 1kHz,±75kHz dev 60dBμ(ANT input)	Connect a DC voltmeter between TP3 and TP4.	AUTO or MONO 98.0MHz	L4 (X05-)	0V	(a)
2	VCO	(A) 98.0MHz 0 dev 100dBμ(ANT input)	Connect a frequency counter between TP5 and GND.	AUTO 98.0MHz	VR3 (X05-)	19.00kHz	(b)
3	DISTORTION (STEREO)	(C) 98.0MHz 1kHz,±68.25kHz dev Selector:L or R Pilot:±6.75kHz dev 60dBμ(ANT input)	(B)	98.0MHz	IFT (Front end)	Minimum distortion.	
4	SEPARATION (E Type)	(C) 98.0MHz Stereo signal 60dBμ(ANT input)	(B)	AUTO 98.0MHz	VR4 (X05-)	Minimum crosstalk.	
5	TUNING LEVEL	(A) 98.0MHz 0 dev 14dBμ(ANT input) 75Ω	(B)	AUTO or MONO 98.0MHz	VR1 (X05-)	Adjust VR1 and stop at the point where FL1(TUNED) goes on.	
AM SECTION			Keep the AM loop antenna installed. SELECTOR: AM				
(1)	BAND EDGE (Low)	–	Connect a DC voltmeter between TP1(GND) and TP2.	–	L9 (X05-)	1.5V	(c)
(2)	BAND EDGE (High)	–	Connect a DC voltmeter between TP1(GND) and TP2.	–	TC2 (X05-)	8.0V	(c)
			Repeat alignments (1) and (2) several times.				
(3)	RF ALIGNMENT (1)	(D) 600kHz 20dBμ(ANT input)	(B)	–	L8 (X05-)	Maximum amplitude and symmetry of the oscilloscope display.	
(4)	RF ALIGNMENT (2)	(D) 1400kHz 20dBμ(ANT input)	(B)	–	TC1 (X05-)	Maximum amplitude and symmetry of the oscilloscope display.	
			Repeat alignments (3) and (4) several times.				
(5)	IF TRANSFORMER	(D) 1000kHz 20dBμ(ANT input)	(B)	–	L10 (X05-)	Maximum amplitud and symmetry of the oscilloscope display.	
(6)	TUNING LEVEL	(D) 1000kHz 36dBμ(ANT input)	(B)	–	VR2 (X05-)	Adjust VR2 and stop at the point where FL1(TUNED) goes on.	
AUDIO SECTION							
[1]	IDLE CURRENT	–	(E) Connect a DC voltmeter across CP1(L) CP2(R)	Volume: 0	VR2(L) VR1(R) (X07-)	13mV	(d)

REGLAGE

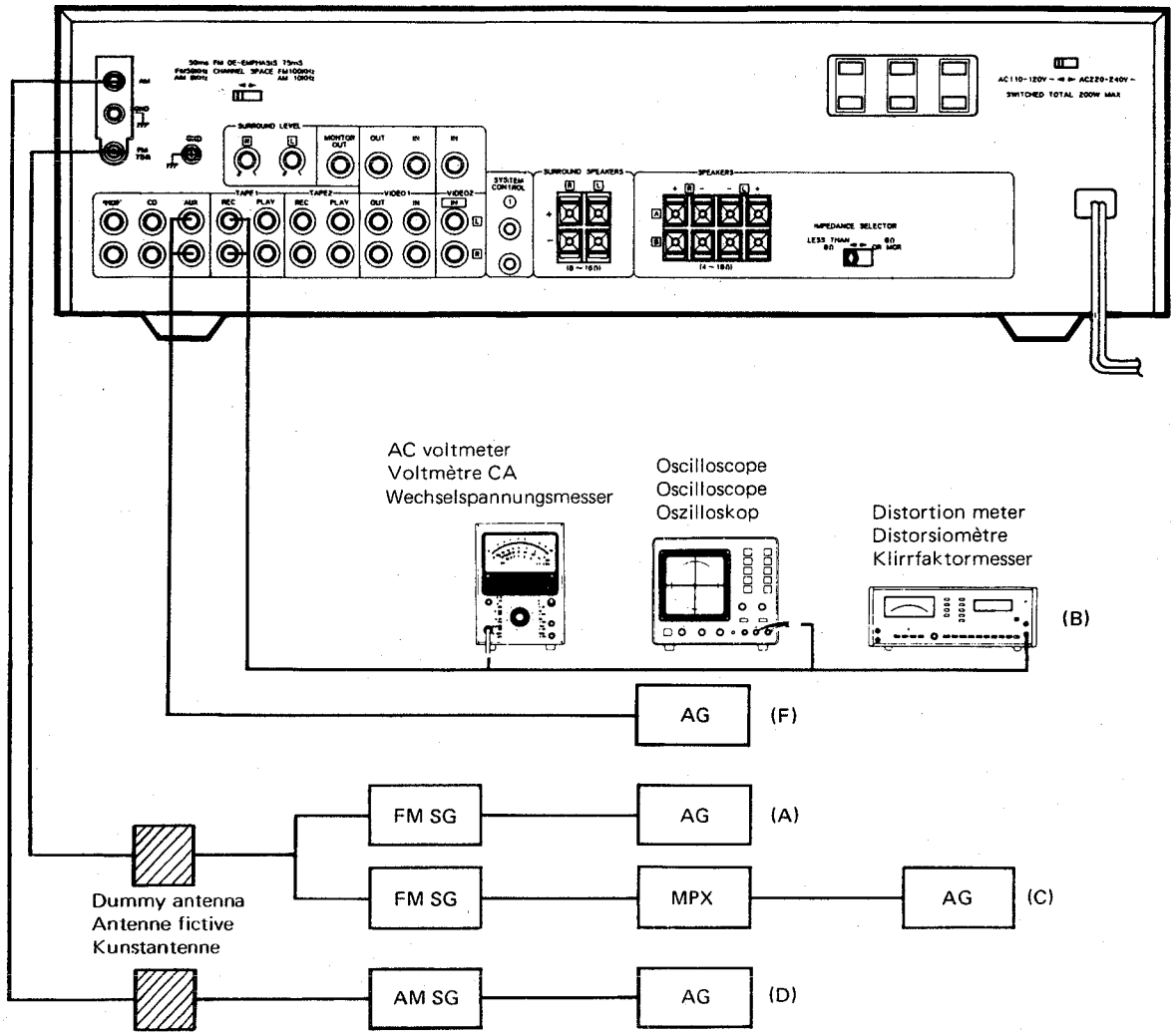
N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU TUNER	POINT DE L'ALIGNEMENT	ALIGNER POUR	FIG.
SECTION MF			SELECTEUR : FM				
1	DETECTEUR	(A) 98,0MHz 1kHz.±75kHz dév 60dBμ(Entrée ANT)	Relier un voltmètre CC entre les TP3 et TP4.	AUTO ou MONO 98,0MHz	L4 (X05-)	0V	(a)
2	OSCILLATEUR CONTROLE PAR LA TENSION	(A) 98,0MHz 0 dév 100dBμ(Entrée ANT)	Relier un compteur de fréquence entre les TP5 et GND.	AUTO 98,0MHz	VR3 (X05-)	19,00kHz	(b)
3	DISTORSION (STEREO)	(C) 98,0MHz 1kHz.68,25kHz dév Selection:l ou R Signal pilote: ±6,75kHz dév 60dBμ(Entrée ANT)	(B)	98,0MHz	Tête H.F. IFT (X05-)	Distorsion minimale.	
4	SEPARATION (E type)	(C) 98,0MHz Signal stéréo 60dBμ(Entrée ANT)	(B)	AUTO 98,0MHz	VR4 (X05-)	Diaphonie minimale.	
5	NIVEAU D'ACCORDER	(A) 98,0MHz 0 dév – 14dBμ(Entrée ANT) 75Ω	(B)	AUTO ou MONO 98,0MHz	VR1 (X05-)	Ajuster VR1 et arrêter le mouvement de VR1 au moment où le FL1(TUNED)s'allume.	
SECTION MA			Laisser l'antenne bouche MA installée. SELECTEUR: AM				
(1)	BORD DE BANDE (Bas)	–	Relier un voltmètre entre les TP1(GND) et TP2.	–	L9 (X05-)	1,5V	(c)
(2)	BORD DE BANDE (Haut)	–	Relier un voltmètre entre les TP1(GND) et TP2.	–	TC2 (X05-)	8,0V	(c)
			Répéter les points (1) et (2) plusieurs fois.				
(3)	ALIGNEMENT H.T. (1)	(D) 600kHz 20dBμ(Entrée ANT)	(B)	–	L8 (X05-)	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(4)	ALIGNEMENT H.T. (2)	(D) 1400kHz 20dBμ(Entrée ANT)	(B)	–	TC1 (X05-)	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
			Répéter les points (3) et (4) plusieurs fois.				
(5)	TRANSFORMATEUR F.I.	(D) 1000kHz 20dBμ(Entrée ANT)	(B)	–	L10 (X05-)	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(6)	NIVEAU D'ACCORDER	(A) 1000kHz 36dBμ(Entrée ANT)	–	–	VR2 (X05-)	Ajuster VR2 et arrêter le mouvement de VR2 au moment où le FL1(TUNED)s'allume.	
SECTION AUDIO							
[1]	COURAÑA DE POLARISATION	–	(E) Connecter un voltmètre CC sur CP1(L) CP2(R)	Volume: 0	VR2(G) VR1(D) (X07-)	13mV	(d)

ABGLEICH

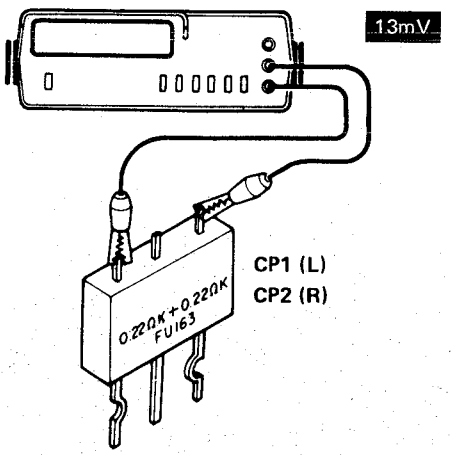
NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	TUNER-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
UKW-EMPFANGSABTEILUNG			WÄHLER: FM				
1	DETEKTOR	(A) 98,0MHz 1kHz.±75kHz Hub 60dBμ(ANT-Eingang)	Einen Gleichspannungs-messer zwischen TP3 und TP4 anschließen.	AUTO oder MONO 98,0MHz	L4 (X05-)	0V	(a)
2	SPANNUNGS-GEREGELTER OSZILLATOR	(A) 98,0MHz 0 Hub 100dBμ(ANT-Eingang)	Einen Frequenzzähler zwischen TP5 und GND anschließen.	AUTO 98,0MHz	VR3 (X05-)	19,00kHz	(b)
3	KLIRRFAKTOR (STEREO)	(C) 98,0MHz 1kHz.±68,25kHz Hub Wähler: L oder R Pilotten: ±6,75kHz Hub 60dBμ(ANT-Eingang)	(B)	98,0MHz	Frontend IFT (X05-)	Minimal Klirrfaktor.	
4	STEREO KANAL TRENNUNG (E Type)	(C) 98,0MHz Stereo Signal 60dBμ(ANT-Eingang)	(B)	AUTO 98,0MHz	VR4 (X05-)	Minimal Klirrfaktor.	
5	ABSTIMM PEGEL	(A) 98,0MHz 0 Hub – 14dBμ(ANT-Eingang) 75Ω	(B)	AUTO oder MONO 98,0MHz	VR1 (X05-)	Den Pegel wiederstand aufdrehen, und dem VR1 Halt geben wobei den FL1(TUNED) anzeiger leuchtet wird.	
MW-EMPFANGSABTEILUNG			Die MW-Rahmenantenne angebracht lassen.		WÄHLER: AM		
(1)	BANDKANTE (Niedrig)	–	Einen Gleichspannungs-messer zwischen TP1(GND) und TP2 anschließen.	–	L9 (X05-)	1,5V	(c)
(2)	BANDKANTE (Hoch)	–	Einen Gleichspannungs-messer zwischen TP1(GND) und TP2 anschließen.	–	TC2 (X05-)	8,0V	(c)
Abstimmungen (1) und (2) mehrere Male wiederholen.							
(3)	HF-ABGLEICH (1)	(D) 600kHz 20dBμ(ANT-Eingang)	(B)	–	L8 (X05-)	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
(4)	HF-ABGLEICH (2)	(D) 1400kHz 20dBμ(ANT-Eingang)	(B)	–	TC1 (X05-)	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
Abstimmungen (3) und (4) mehrere Male wiederholen.							
(5)	ZF-ÜBERTRAGER	(D) 1000kHz 20dBμ(ANT-Eingang)	(B)	–	L10 (X05-)	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
(6)	ABSTIMM PEGEL	(A) 1000kHz 36dBμ(ANT-Eingang)	–	–	VR2 (X05-)	Den Pegel wiederstand aufdrehen, und dem VR2 Halt geben wobei den FL1(TUNED) anzeiger leuchtet wird.	
AUDIO-ABTEILUNG							
[1]	LEERLAUFSTROM	–	(E) Einen Gleichspannungs-messer über CP1(L) CP2(R) anschließen.	Volume: 0	VR2(L) VR1(R) (X07-)	13mV	(d)

ADJUSTMENT/REGLAGE/ABGLEICH

System connections/Raccordements du système/System-Anschlusse



DC voltmeter
Voltmètre de CC
Gleichspannungsmesser



(E)

KR-V77R

VOLTAGE CHECK TABLE

X05-353X-XX

IC1

1 ~ 3	2.36V
4	0V
5	9.2V
6	9.15V
7	9.13V
8	4.27V
9	3.45V
10	3.26V
11	1.26V
12	1.48V
13, 14	0.26V
15	2.39V
16	1.45V
17	6.79V
18, 19	0.05V
20, 21	3.95V
22	2.83V

IC2

1	0.75V
2	1.64V
6	0.07V
7	11.16V
8	0.01V
9	0.2V
10	0.06V
11	2.8V
12, 13	5.16V
14	2.05V
15	1.16V
16	0V

IC3

1	10.6V
2	2.57V
3	5.85V
4, 5	8.52V
6, 7	2.79V
8	0V
9	5.1V
10, 11	2.55V
12	2.54V
13, 14	2.56V
15	3.19V
16	2.5V

	B	C	E
Q1	2.4V	8.8V	1.7V
Q2	0.6V	1.9V	0V
Q3	1.2V	1.9V	0.6V
Q7	10.5V	11V	11V
Q8	11.2V	0.07V	11V

X07-2360-12

	B	C	E
Q1, 2	0V	C + 2.5V	0.6V
Q3, 4	–	C + 2.5V	0.6V
Q5, 6	C + 2.5V	B – 31V	C + 1.9V
Q7, 8	C + 2.5V	–1.2V	C + 1.9V
Q9, 10	B – 0.8V	1.1V	B – 1.3V
Q11, 12	1.1V	B	0.5V
Q13, 14	–1.1V	C	–0.5V
Q17	–	–	12.6V
Q19	–	12.6V	–

X09-265X-XX

IC1, 5, 7,

4	–11.9V
8	11V

IC2, 3

1	–11.9V
28	11V

IC4

5 ~ 7	–11.9V
12, 13	10.1V
14	11V

IC6

1	–11.9V
7	0V
13	0V
16	11V

IC10

1	21V
3	12.6V

	B	C	E
Q2	–	5.5V	–
Q9, 10	6.1V	13.1V	5.5V
Q12	–	–	13.1V
Q13	0.7V	POWER ON : 0V POWER OFF : 16.8V	0V

X14-232X-XX

IC1

9, 10	5V
64	0V

IC4, 5, 6, 7

8	5.5V
9	–30.9V

IC2

13, 14	0V
28	5V

IC10

7	0V
14	5V

IC3

15, 16	5V
19	0V
23	0V
32	0V
42	5V

IC14

1	5.5V
2	0V
3	5.3V

	B	C	E
Q1, 2	–11.8V	0V	0V
Q3, 4	0.7V	0V	0V
Q5, 6	0.5V	B	0.01V
Q7, 8	–0.67V	C	–0.5V
Q9, 10	–0.5V	1.1V	–1.1V
Q24	–	0.6V	0V
Q25	0.6V	B – 0.7V	0V
Q26	B – 0.7V	B	B
Q27	–20.7V	–12.8V	–21.3V
Q28	–13.8V	–20.7V	–12.8V
Q29	–0.6V	–13.8V	0V
Q30	–29.8V	–37.5V	–30.9V
Q31	–	–29.8V	5.5V
Q32	–	–11.8V	0V
Q33	2.7V	0V	3.3V
Q34	1.8V	0V	2.5V
Q35	1.9V	0V	2.5V
Q37	11.8V	17.8V	20.6V
Q38	–11.2V	–11.9V	–11.9V
Q39	–11.2V	10.1V	–11.9V
Q43	11.6V	12.6V	11V

X85-1120-10

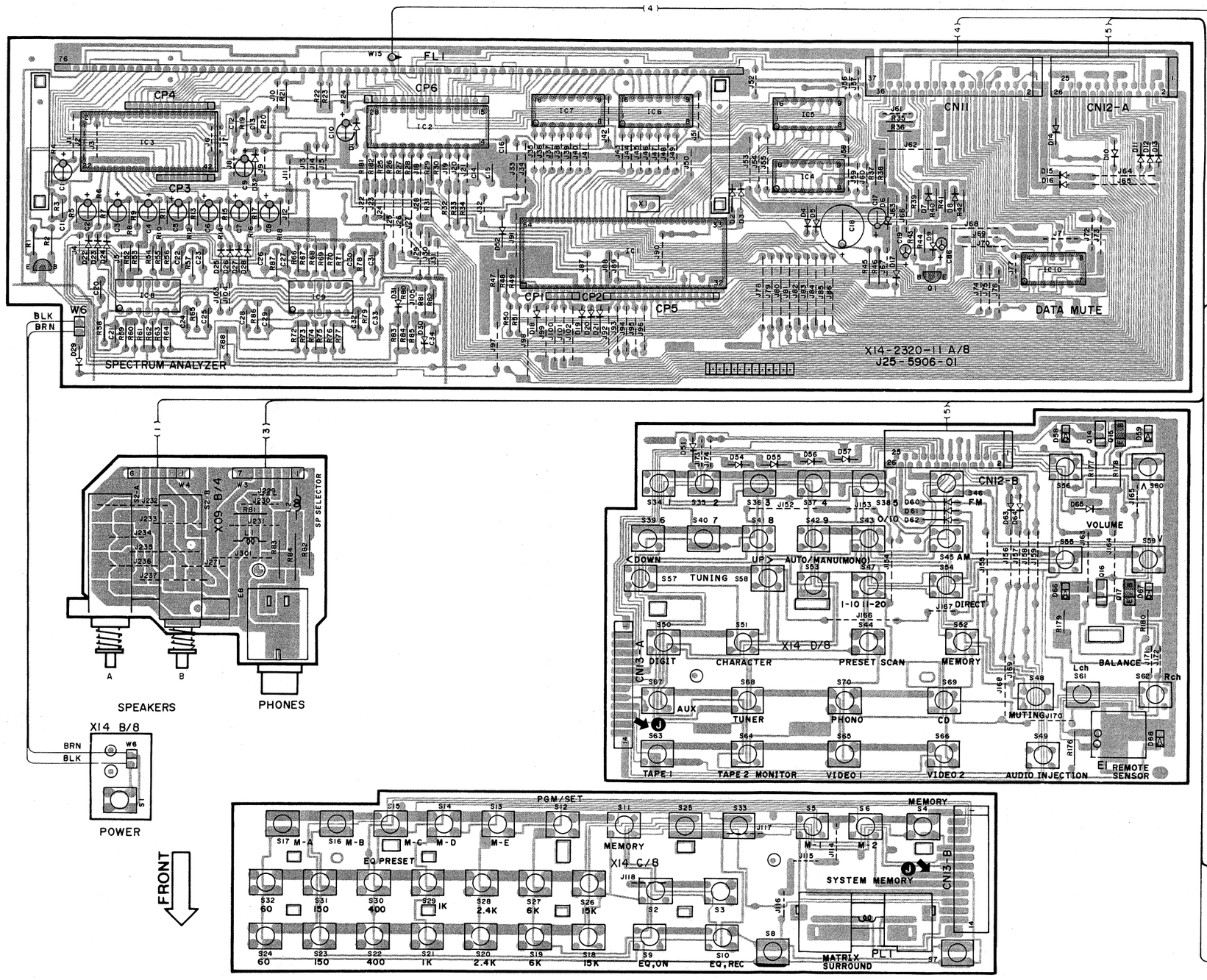
IC1

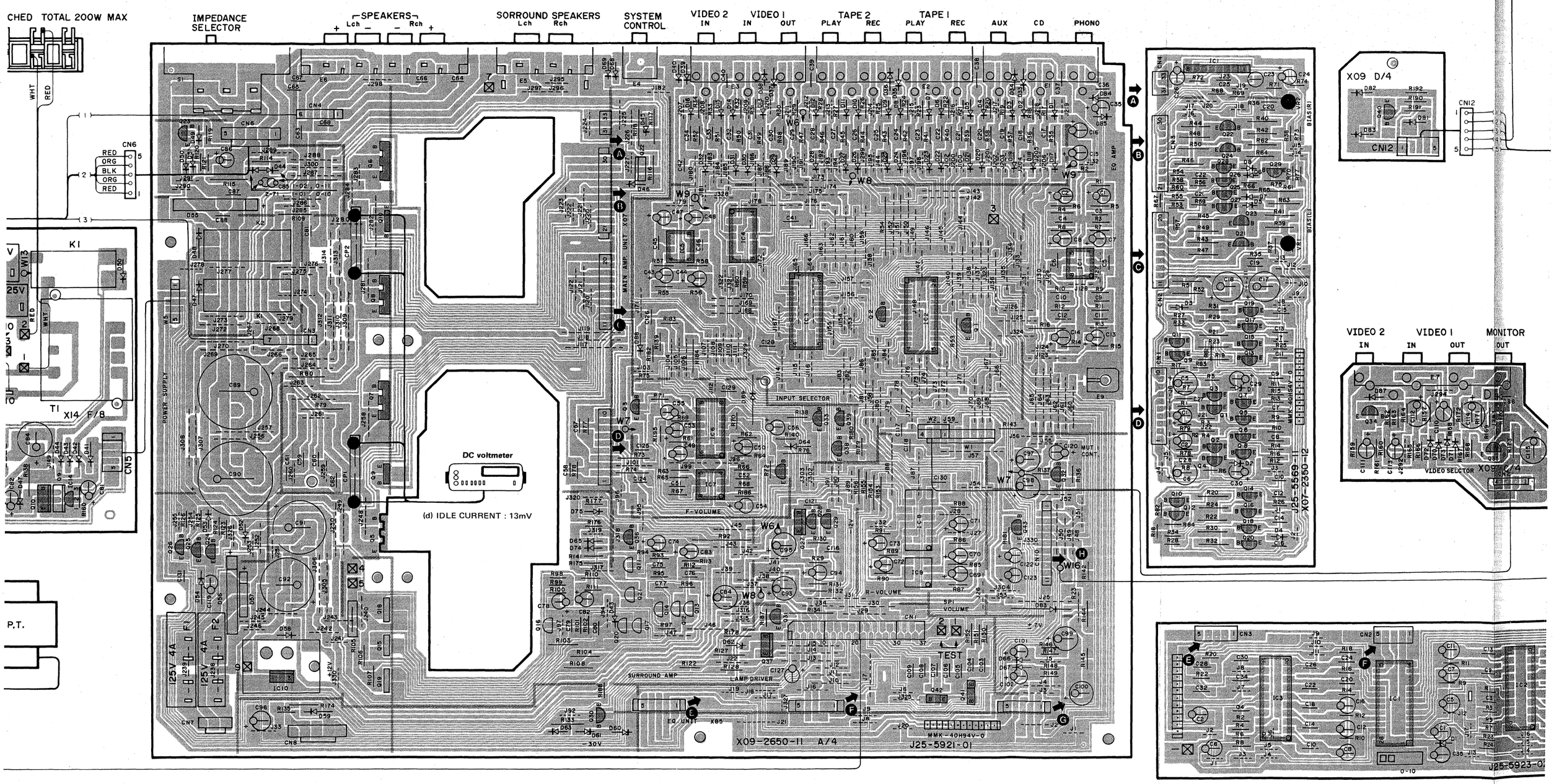
1	6.6V
2 ~ 10	0V
11 ~ 14	–6.7V
15	5.2V
16, 17	0.1V
18 ~ 28	0V

IC2, 3

1	0V
2 ~ 10	10.7V
11 ~ 14	0V
15	–11.7V
16	0V
18	10.6V
19	0V
20	–11.7V

PC BOARD (COMPONENT SIDE VIEW)

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IMPEDANCE SELECTOR
SPEAKERS
Lch
Rch
SORROUND SPEAKERS
Lch
Rch
SYSTEM CONTROL
VIDEO 2 IN
VIDEO 1 IN
OUT
TAPE 2 PLAY
REC
TAPE 1 PLAY
REC
AUX
CD
PHONO
DC voltmeter
(d) IDLE CURRENT : 13mV
MAIN AMP UNIT X07
INPUT SELECTOR
F-VOLUME
R-VOLUME
SP VOLUME
SURROUND AMP
LAMP DRIVER
EQ AMP
POWER SUPPLY
X09-2650-11 A/4
J25-5921-01
X07-2360-12
J25-5923-03
X09 D/4
CNI2
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VIDEO 1 IN
MONITOR OUT
VIDEO SELCTOR X09-2654-14
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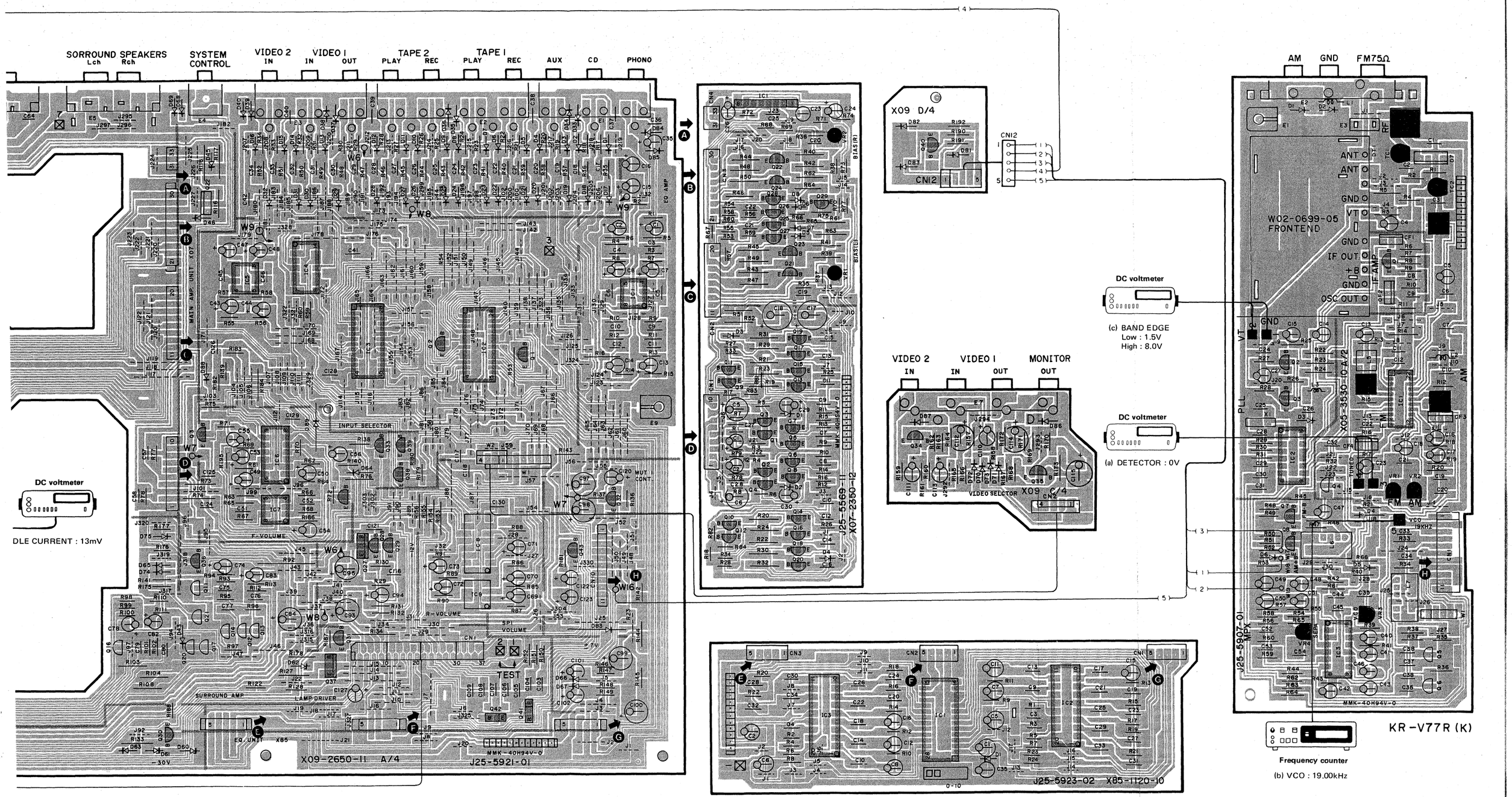
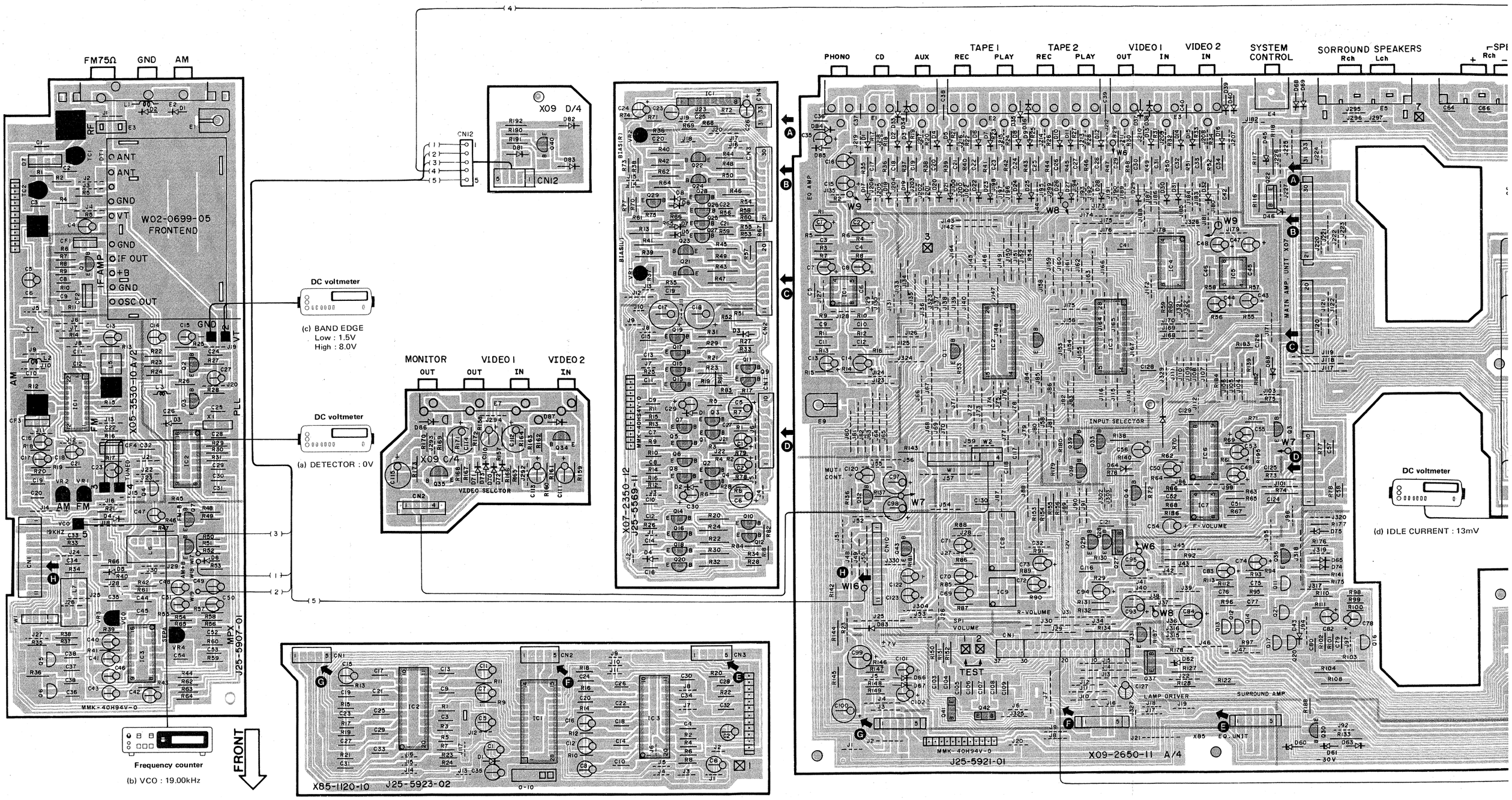
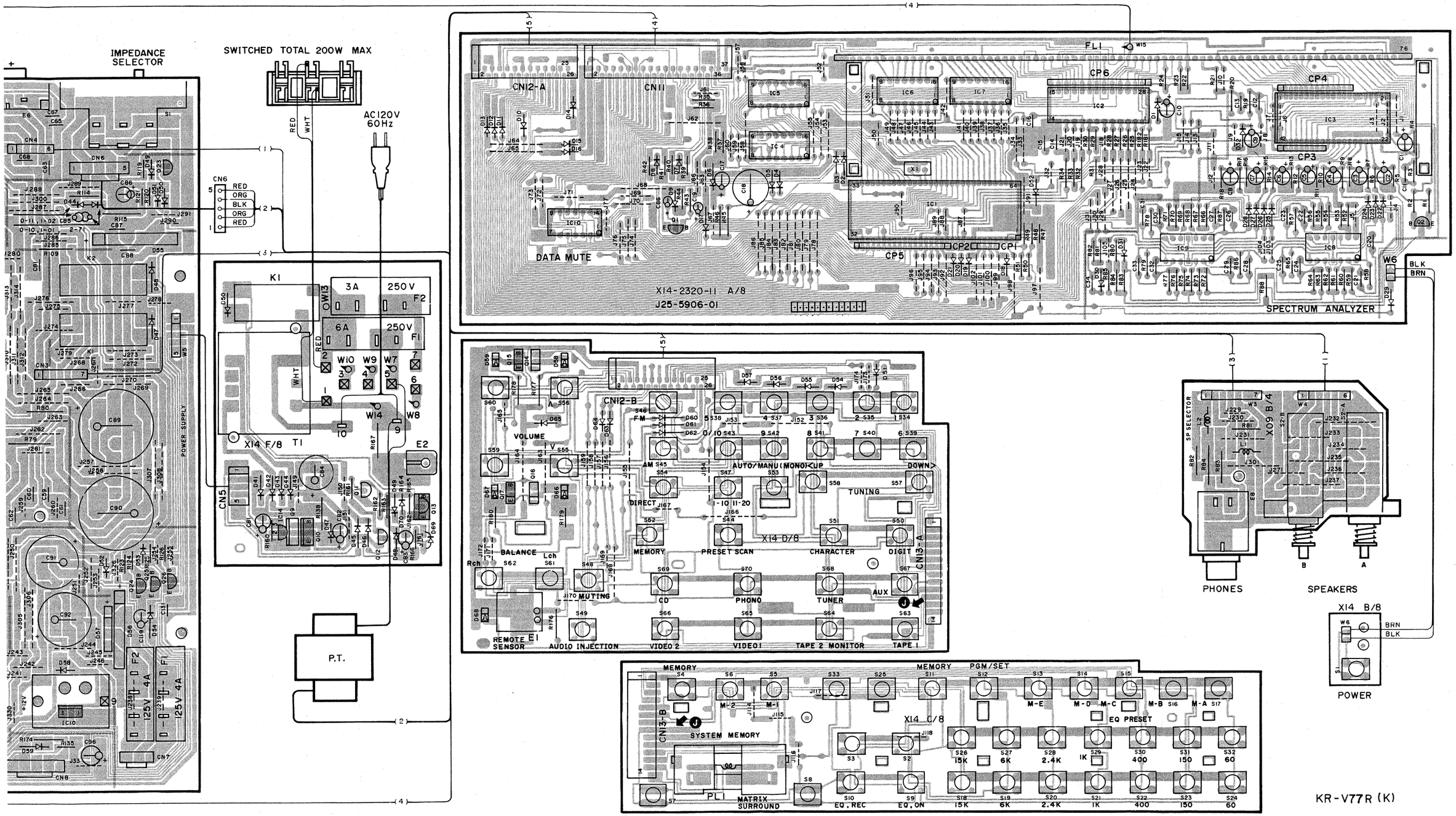


Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (FOIL SIDE VIEW)





KR-V77R (K)

Refer to the schematic diagram for the values of resistors and capacitors.

X05-353X-XX

IC1

1 ~ 3	2.36V
4	0V
5	9.2V
6	9.15V
7	9.13V
8	4.27V
9	3.45V
10	3.26V
11	1.26V
12	1.48V
13, 14	0.26V
15	2.39V
16	1.45V
17	6.79V
18, 19	0.05V
20, 21	3.95V
22	2.83V

IC2

1	0.75V
2	1.64V
6	0.07V
7	11.16V
8	0.01V
9	0.2V
10	0.06V
11	2.8V
12, 13	5.16V
14	2.05V
15	1.16V
16	0V

IC3

1	10.6V
2	2.57V
3	5.85V
4, 5	8.52V
6, 7	2.79V
8	0V
9	5.1V
10, 11	2.55V
12	2.54V
13, 14	2.56V
15	3.19V
16	2.5V

	B	C	E
Q1	2.4V	8.8V	1.7V
Q2	0.6V	1.9V	0V
Q3	1.2V	1.9V	0.6V
Q7	10.5V	11V	11V
Q8	11.2V	0.07V	11V

X07-2360-12

	B	C	E
Q1, 2	0V	C + 2.5V	0.6V
Q3, 4	–	C + 2.5V	0.6V
Q5, 6	C + 2.5V	B – 31V	C + 1.9V
Q7, 8	C + 2.5V	–1.2V	C + 1.9V
Q9, 10	B – 0.8V	1.1V	B – 1.3V
Q11, 12	1.1V	B	0.5V
Q13, 14	–1.1V	C	–0.5V
Q17	–	–	12.6V
Q19	–	12.6V	–

X09-265X-XX

IC1, 5, 7,

4	–11.9V
8	11V

IC2, 3

1	–11.9V
28	11V

IC4

5 ~ 7	–11.9V
12, 13	10.1V
14	11V

IC6

1	–11.9V
7	0V
13	0V
16	11V

IC10

1	21V
3	12.6V

	B	C	E
Q2	–	5.5V	–
Q9, 10	6.1V	13.1V	5.5V
Q12	–	–	13.1V
Q13	0.7V	POWER ON : 0V POWER OFF : 16.8V	0V

X14-232X-XX

IC1

9, 10	5V
64	0V

IC4, 5, 6, 7

8	5.5V
9	–30.9V

IC2

13, 14	0V
28	5V

IC10

7	0V
14	5V

IC3

15, 16	5V
19	0V
23	0V
32	0V
42	5V

IC14

1	5.5V
2	0V
3	5.3V

	B	C	E
Q1, 2	–11.8V	0V	0V
Q3, 4	0.7V	0V	0V
Q5, 6	0.5V	B	0.01V
Q7, 8	–0.67V	C	–0.5V
Q9, 10	–0.5V	1.1V	–1.1V
Q24	–	0.6V	0V
Q25	0.6V	B – 0.7V	0V
Q26	B – 0.7V	B	B
Q27	–20.7V	–12.8V	–21.3V
Q28	–13.8V	–20.7V	–12.8V
Q29	–0.6V	–13.8V	0V
Q30	–29.8V	–37.5V	–30.9V
Q31	–	–29.8V	5.5V
Q32	–	–11.8V	0V
Q33	2.7V	0V	3.3V
Q34	1.8V	0V	2.5V
Q35	1.9V	0V	2.5V
Q37	11.8V	17.8V	20.6V
Q38	–11.2V	–11.9V	–11.9V
Q39	–11.2V	10.1V	–11.9V
Q43	11.6V	12.6V	11V

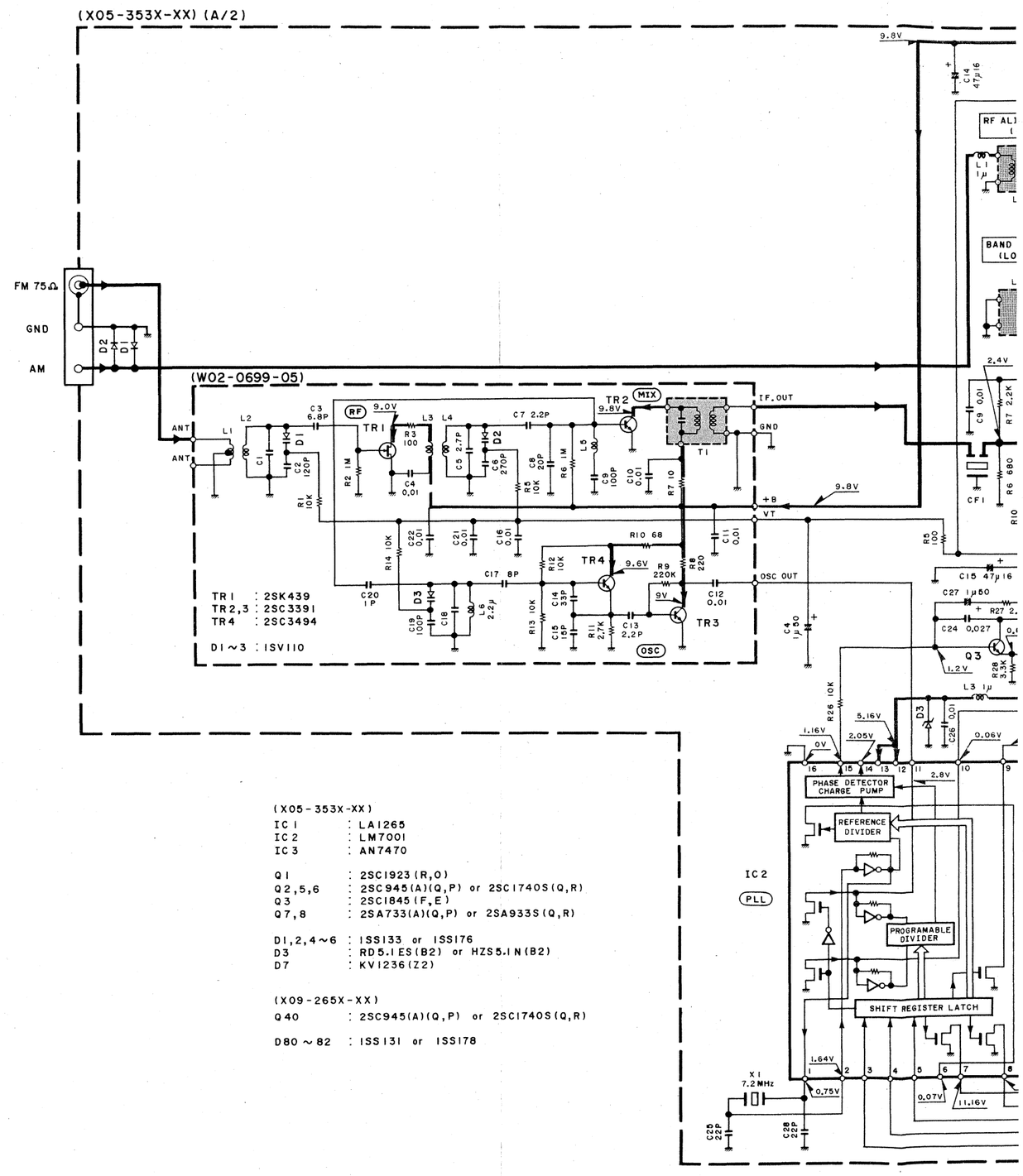
X85-1120-10

IC1

1	6.6V
2 ~ 10	0V
11 ~ 14	–6.7V
15	5.2V
16, 17	0.1V
18 ~ 28	0V

IC2, 3

1	0V
2 ~ 10	10.7V
11 ~ 14	0V
15	–11.7V
16	0V
18	10.6V
19	0V
20	–11.7V



(X09-265X-XX)

- Must always be used when the μPD75108CW-170 is used as microprocessor IC1 (X14-).
- This circuit does not cause any problem even when the μPD75108CW-200 is used as microprocessor IC1 (X14-). Furthermore, the -200 cannot be used if this circuit alone is removed.

(X09-265X-XX)

Ref. No. / MICRO. PROS. IC1(X14)	D/4
μPD75108CW-170	YES
μPD75108CW-200	NO

(X09-265X-X)

CN12: MONO/ST ① GND ② VDD ③ AUT/MONO ④ MUTE1 ⑤ — 11V — D81 — R192 1K — D82

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A1265
M7001
N7470

SC1923(R,O)
SC945(A)(Q,P) or 2SC1740S(Q,R)
SC1845(F,E)
SA733(A)(Q,P) or 2SA933S(Q,R)

3S133 or 1SS176
D5.1ES(B2) or HZS5.1N(B2)
V1236(Z2)

:)
SC945(A)(Q,P) or 2SC1740S(Q,R)

3S131 or 1SS178

(X05-353X-XX)

Ref. No / DESTINATION		R17	R35~38	C36 37	C38 39	Q5,6	W1	X05 (B/2)
K,P	0-10	16K	NO	0.043	NO	NO	NO	NO
U,UE	0-81	36K	YES	0.027	YES	YES	YES	YES

(X05-353X-XX)(A/2)

Ref. No. / MICRO. PROS. IC1(X14)	W17~19	D6	R52
μPD75108CW-170	YES	NO	NO
μPD75108CW-200	NO	YES	YES

SIGNAL LINE
GND LINE
+B LINE

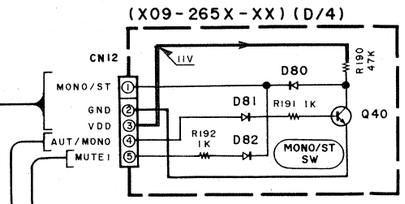
(X09-265X-XX)

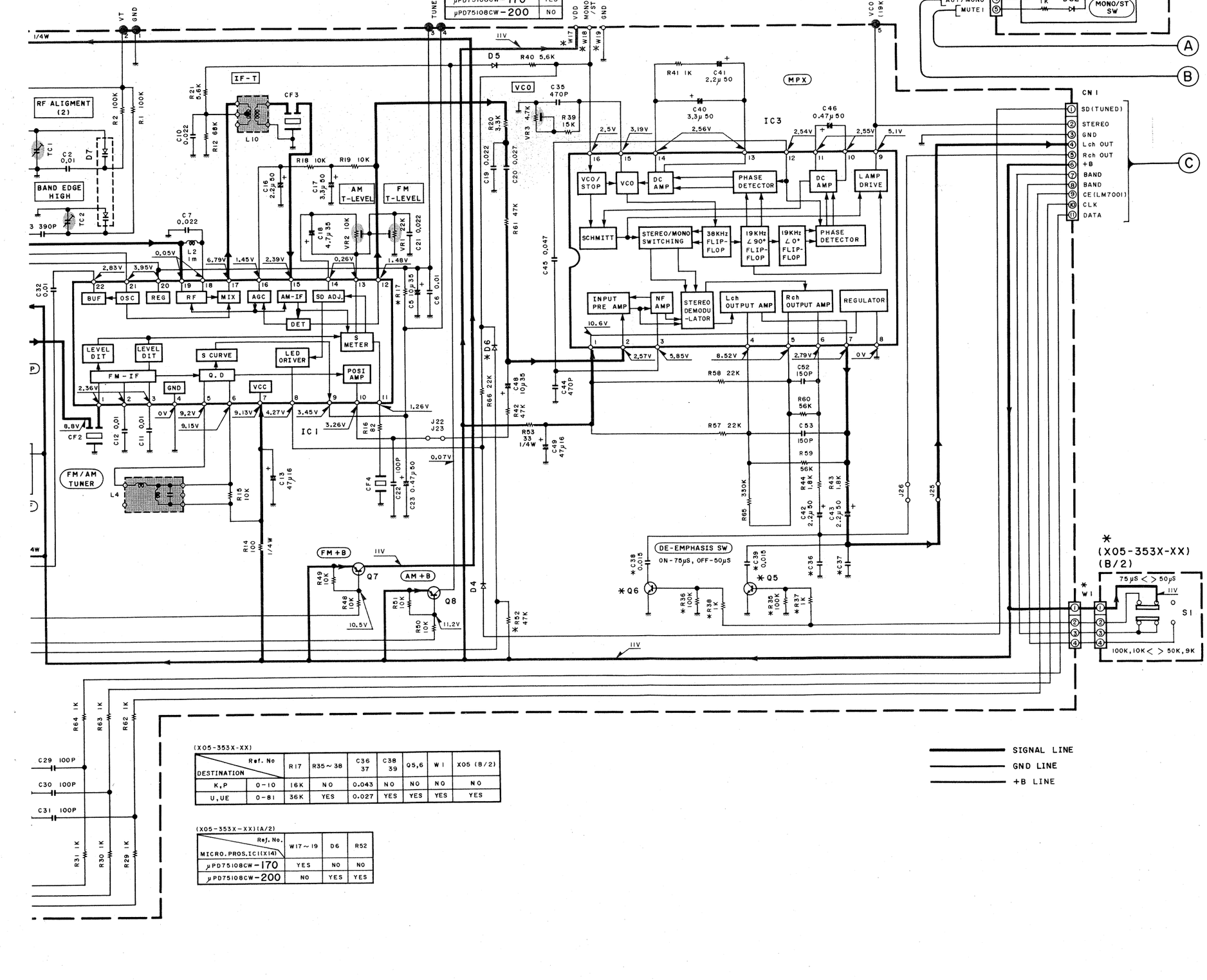
- Must always be used when the μPD75108CW-170 is used as microprocessor IC1 (X14-).
- This circuit does not cause any problem even when the μPD75108CW-200 is used as microprocessor IC1 (X14-). Furthermore, the -200 cannot be used if this circuit alone is removed.

(X09-265X-XX)

Ref. No. / MICRO. PROS. IC1(X14)	D/4
μPD75108CW-170	YES
μPD75108CW-200	NO

(X09-265X-XX) (D/4)





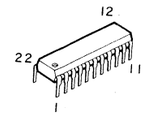
(X05-353X-XX)

Ref. No / DESTINATION		R17	R35~38	C36 37	C38 39	Q5,6	W1	X05 (B/2)
K,P	0-10	16K	NO	0.043	NO	NO	NO	NO
U,UE	0-81	36K	YES	0.027	YES	YES	YES	YES

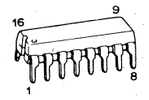
(X05-353X-XX)(A/2)

Ref. No. / MICRO. PROS. IC1(X14)	W17~19	D6	R52
μPD75108CW-170	YES	NO	NO
μPD75108CW-200	NO	YES	YES

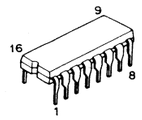
LA1265



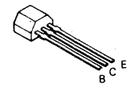
LM7001



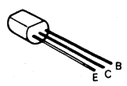
AN7470



2SA933S
2SC1740S



2SA733(A)
2SC945(A)
2SC1845
2SC1923



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

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- Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen. Voltmeter gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig.

KR-V77R

KENWOOD

V W X Y Z AA AB AC AD AE AF

(X09-265X-XX)(A/4)

IC1 (1/2) IC1 (2/2) EQ. AMP

IC2 SELECTOR

IC3 GE REC SELECTOR

IC4 VIDEO SELECTOR

IC4 TRUTH TABLE

CONTROL (CA-CD)	SWITCH (A-D)
H	ON
L	OFF

IC5 (1/2) IC5 (2/2) BUFFER

IC6 ELECTRIC VOL.

IC7 (2/2) VOL. BUFFER

IC7 (1/2)

IC10

Q1 Q2 MUTE

Q27 Q28 Q29 -12V AVR

Q30 -30 AVR

Q31

Q32 MUTE DRIVE

Q33 MUTE DRIVE

Q39 VIDEO SW

Q41 CLK MUTE

Q42 DATA MUTE

Q43 LIPUL FILTER

Q3 Q4 MUTE

Q5 SURROUND LAMP DRIVE

Q7 Q8 POWER TR

Q6 Q10 Q9

Q24 Q25

PHONO CD AUX TAPE 1 TAPE 2 VIDEO 1 VIDEO 2 (AUDIO) SYNCRO

REC PLAY IN OUT

A SP B SP SURROUND

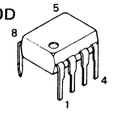
CN10 CN1 CN4 W2 W16

DT1 (1/3) DT1 (2/3) DT1 (3/3)

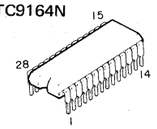
DT2 (1/5) DT2 (2/5) DT2 (3/5) DT2 (4/5) DT2 (5/5)

X14

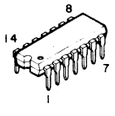
NJM4558D
NJM4558D-A
NJM4560D



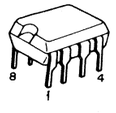
TC9162N
TC9164N



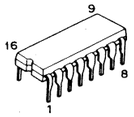
LC4966



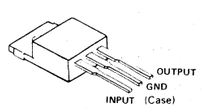
M5218P



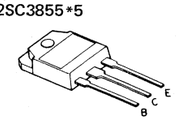
TC9176P



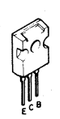
μPC7812HF



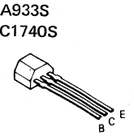
2SA1491*5
2SC3855*5



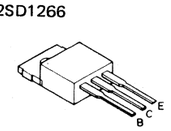
2SC3419



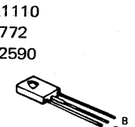
2SA933S
2SC1740S



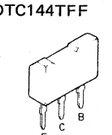
2SD1266



2SA1110
2SB772
2SC2590



DTC144TFF



(X09-265X-XX)(B/4)

(X09-2652-XX)(C/4)

(X14)(F/8) (U,UE)TYPE

(X07-2360-12)

(X09-265X-XX)

IC1,7	: NJM4558D-A or NJM4560D	
IC2	: TC9164N	
IC3	: TC9162N	
IC4	: LC4966	
IC5	: NJM4558D or M5218P	
IC6	: TC9176P	
IC10	: μPC7812HF	
Q1~4,38,39	: 2SC2878(B)	
Q5,6	: 2SC3855*5	
Q7,8	: 2SA1491*5	
Q9,10	: 2SC3419(Y)	
Q28,29,32,33	: 2SA733(A)(Q,P) or 2SA933S(Q,R)	
Q24	: 2SC945(A)(Q,P) or 2SC1740S(Q,R)	
Q25,43	: 2SC2003(L,K)	
Q23,26,31	: 2SA954(L,K)	
Q27,37	: 2SD1266	
Q30	: 2SB772	
Q34,35	: 2SA999(E,F)	
Q41,42	: DTC144TFF	

D1~40,51,58,68,69,84~89	: ISS133 or ISS176
D44,48,54,59,83	: DSM1A1 or S5566B
D49,50,53,70~73	: ISS131 or ISS178
D55	: RBV-602LFA or D5SBA20F03
D57	: KBP02ML-6127
D60,61	: RD18ES(B) or HZS18N(B)
D62	: RD11ES(B) or HZS11N(B)
D63,67	: RD6.8ES(B2) or HZS6.8N(B2)
D66	: RD5.1ES(B2) or HZS5.1N(B2)
Q13	: *
IC14	: PST529C
D41~46,50	: DSM1A1 or S5566B
D47	: RD6.2ES(B2) or HZS6.2N(B2)
D48,49,69,70	: ISS133 or ISS176

(X14-232X-XX)

DESTINATION	Ref. No.	R138	R161~163	R164	R165	R167	C83	C84	D45,46,48 49,69,70	Q9,11,12	Q13	F1	F2
O-11	K,P	2.2K 1/4W	NO	YES	J162	YES	NO	470μ25	NO	NO	2SC2003(L,K)	6A	NO
O-82	U,UE	3.9K 1/4W	YES	NO	YES	NO	YES	1000μ35	YES	YES	2SD1266	3A	YES

(X09-265X-XX)

DESTINATION	Ref. No.	F1,2	J238,239
O-11	K,U,UE	NO	YES
I-02	P	YES	NO

FINAL TR ±B

	* REMARK	8Ω or MORE	LESS THAN 8Ω
AC	A	40.3V	30.1V
DC	B	56.3V	42.3V
	C	-56.3V	-42.3V

(X09-265X-XX)(A/4)

MICRO PROC IC1(X14) \ Ref. No.	W16
μPD75108CW-170	YES
μPD75108CW-200	NO

2SA1110
2SB772
2SC2590

DTC144TFF

PST529C

2SA733(A) 2SC2003
2SA954 2SC2878
2SA992
2SA999
2SC945(A)
2SC1845

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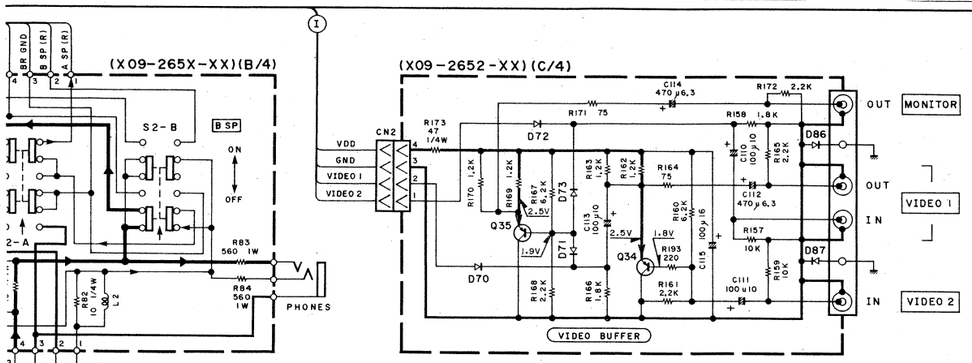
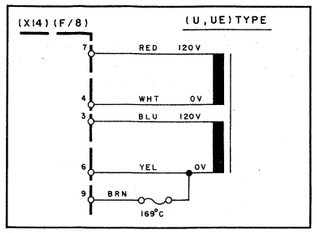




SIGNAL LINE
GND LINE
+B LINE
−B LINE

(X09-265X-XX)

IC1,7	: NJM4558D-A or NJM4560D
IC2	: TC9164N
IC3	: TC9162N
IC4	: LC4966
IC5	: NJM4558D or M5218P
IC6	: TC9176P
IC10	: μPC7812HF
Q1~4,38,39	: 2SC2878(B)
Q5,6	: 2SC3855*5
Q7,8	: 2SA1491*5
Q9,10	: 2SC3419(Y)
Q28,29,32,33	: 2SA733(A)(Q,P) or 2SA933S(Q,R)
Q24	: 2SC945(A)(Q,P) or 2SC1740S(Q,R)
Q25,43	: 2SC2003(L,K)
Q23,26,31	: 2SA954(L,K)
Q27,37	: 2SD1266
Q30	: 2SB772
Q34,35	: 2SA999(E,F)
Q41,42	: DTC144TFF

(X07-2360-12)

Q1~4,9,10,17	: 2SA992(F,E)
Q5~8,15,16	: 2SC1845(F,E)
Q11,12	: 2SC2590
Q13,14	: 2SA1110
Q18,19	: 2SC945(A)(Q,P)
D1,2,7	: ISS176 or ISS133
D3~6	: ISS178 or ISS131

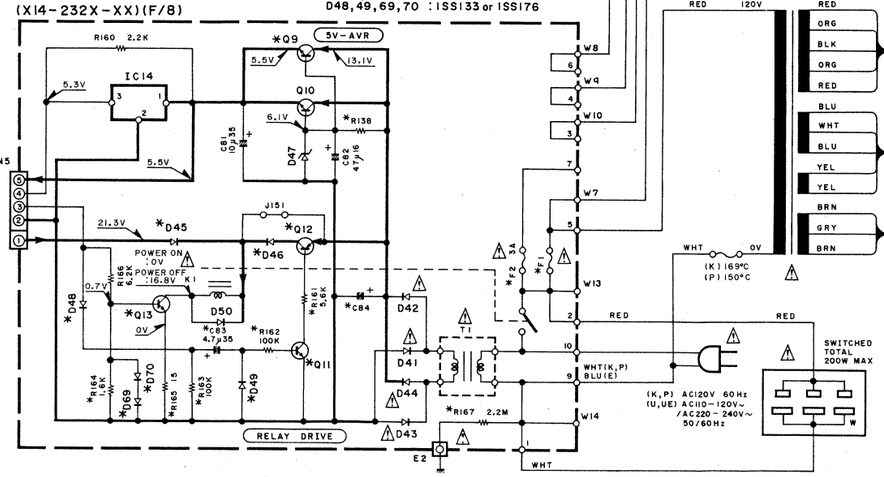
D1~40,51,58,68,69,84~89 : ISS133 or ISS176
D44,48,54,59,83 : DSMIAI or S5566B
D49,50,53,70~73 : ISS131 or ISS178
D55 : RBV-602LFA or D5SBA20F03
D57 : KBP02ML-6127
D60,61 : RD18ES(B) or HZS18N(B)
D62 : RD11ES(B) or HZS11N(B)
D63,67 : RD6.8ES(B2) or HZS6.8N(B2)
D66 : RD5.1ES(B2) or HZS5.1N(B2)

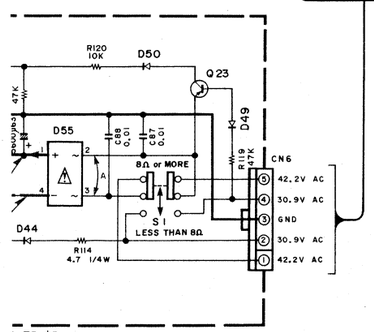
(X14-232X-XX)

DESTINATION \ Ref. No.		R138	R161~163	R164	R165	R167	C83	C84	D45,46,48 49,69,70	Q9,11,12	Q13	F1	F2
0-11	K,P	2.2K 1/4W	NO	YES	J162	YES	NO	470μ25	NO	NO	2SC2003(L,K)	6A	NO
0-82	U,UE	3.9K 1/4W	YES	NO	YES	NO	YES	1000μ35	YES	YES	2SD1266	3A	YES

Q9,10 : 2SD1266 or 2SC2003
Q11 : 2SC945(A)(Q,P) or 2SC1740S(Q,R)
Q12 : 2SA954(L,K)
Q13 : *
IC14 : PST529C
D41~46,50 : DSMIAI or S5566B
D47 : RD6.2ES(B2) or HZS6.2N(B2)
D48,49,69,70 : ISS133 or ISS176

(U/UE) TYPE ONLY
(X14-2320-81)(G/8)





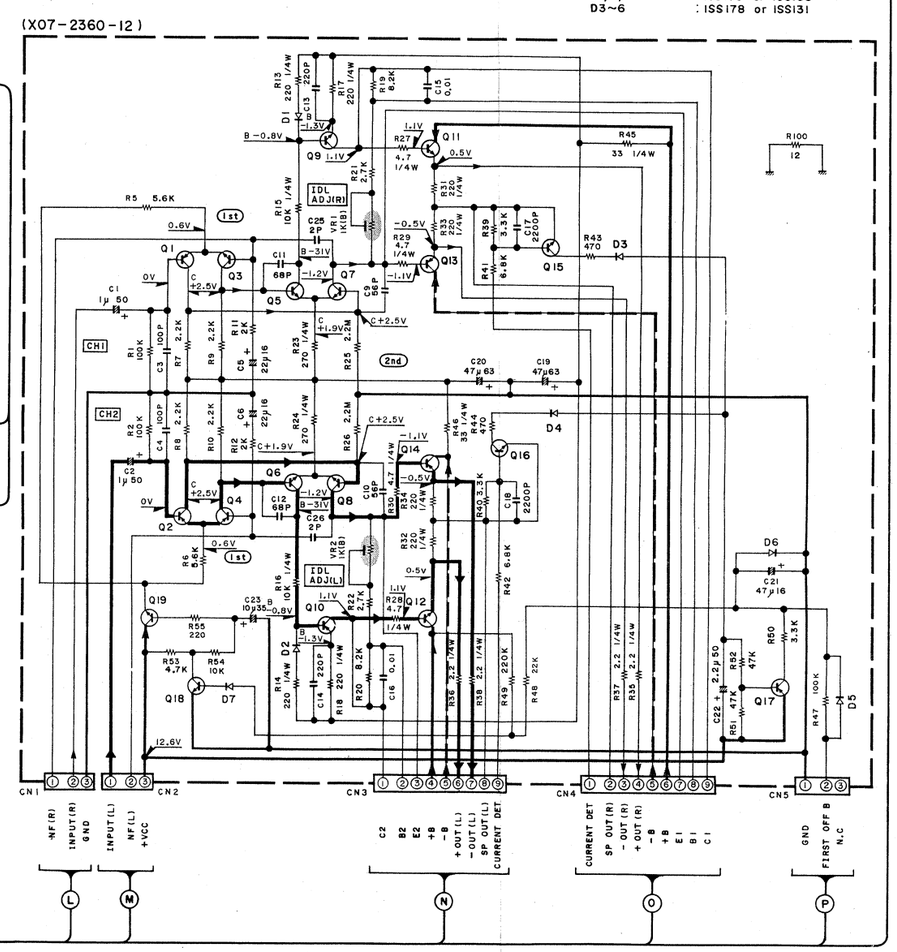
S1

REMARK	8Ω or MORE	LESS THAN 8Ω
A	40.3V	30.1V
B	56.3V	42.3V
C	−56.3V	−42.3V

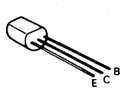
(X09-265X-XX)(A/4)

MICRO PROC IC1(X14) \ Ref.No.	W16
μPD75108CW-170	YES
μPD75108CW-200	NO

(X07-2360-12)



2SA733(A) 2SC2003
2SA954 2SC2878
2SA992
2SA999
2SC945(A)
2SC1845



INPUT
UTPUT

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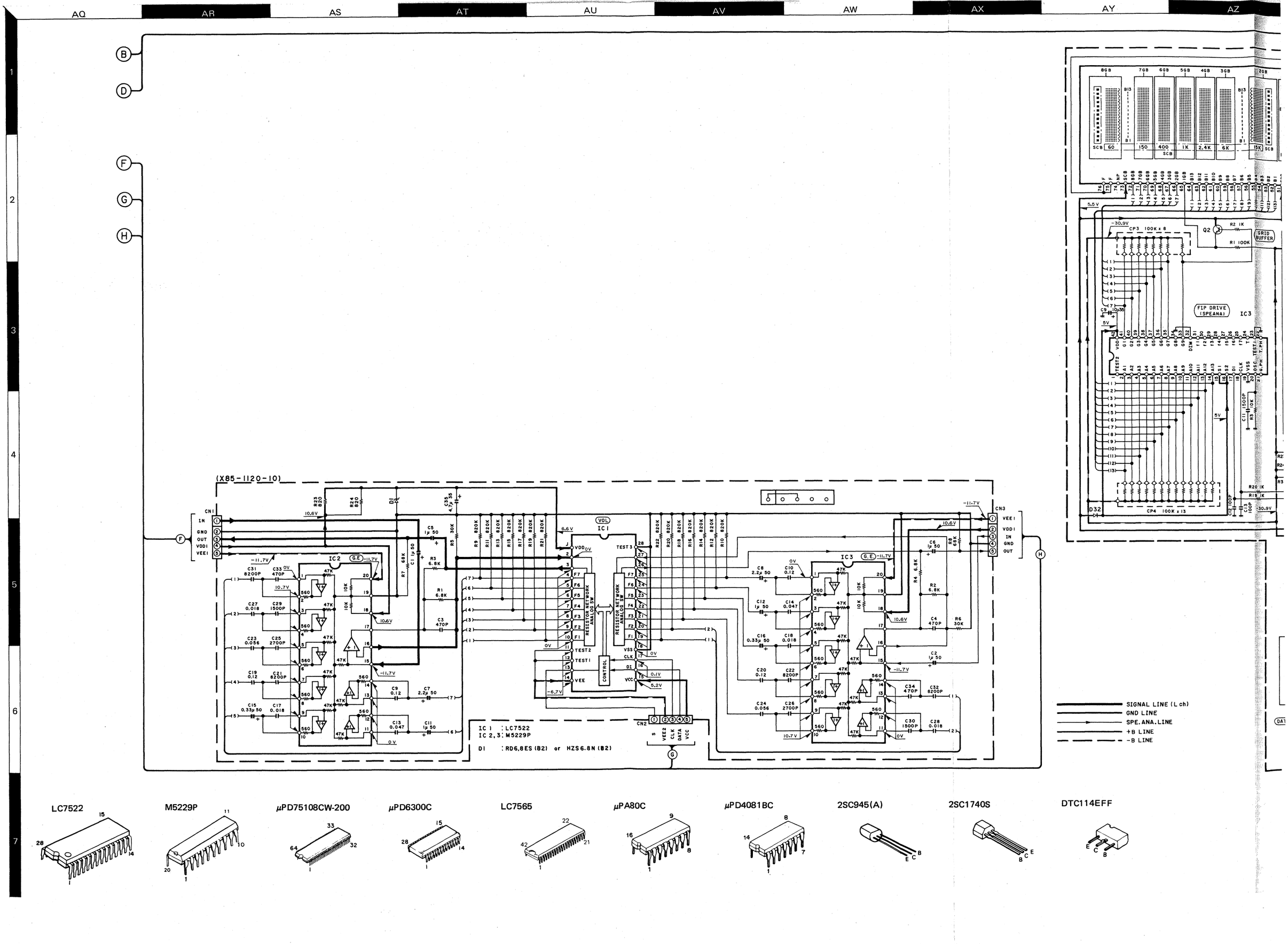
- Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen. Voltmeter gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen instrumenten oder Geräten u.U. geringfügig.

KR-V77R
KENWOOD



LC7522

M5229P

μPD75108CW-200

μPD6300C

LC7565

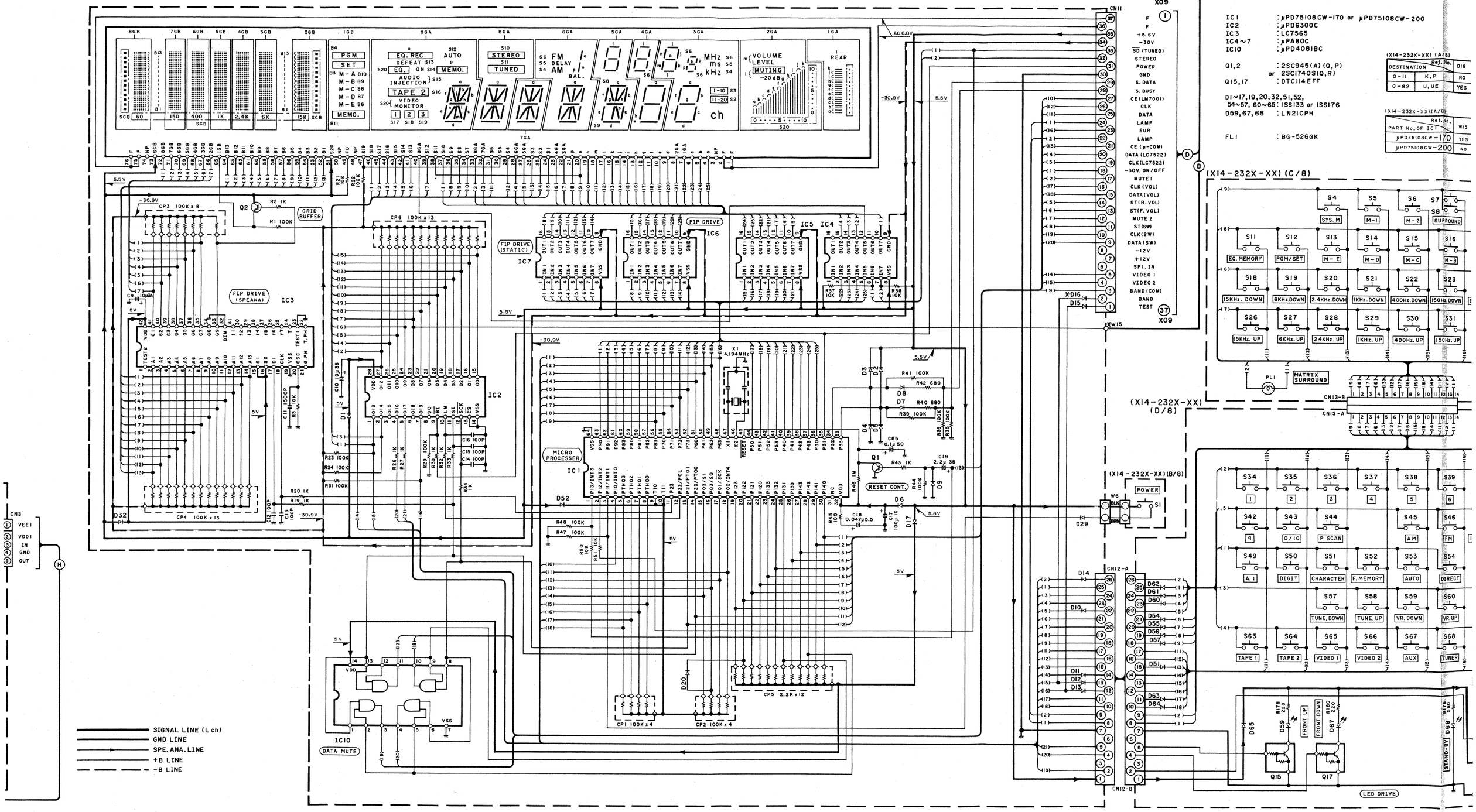
μPA80C

μPD4081BC

2SC945(A)

2SC1740S

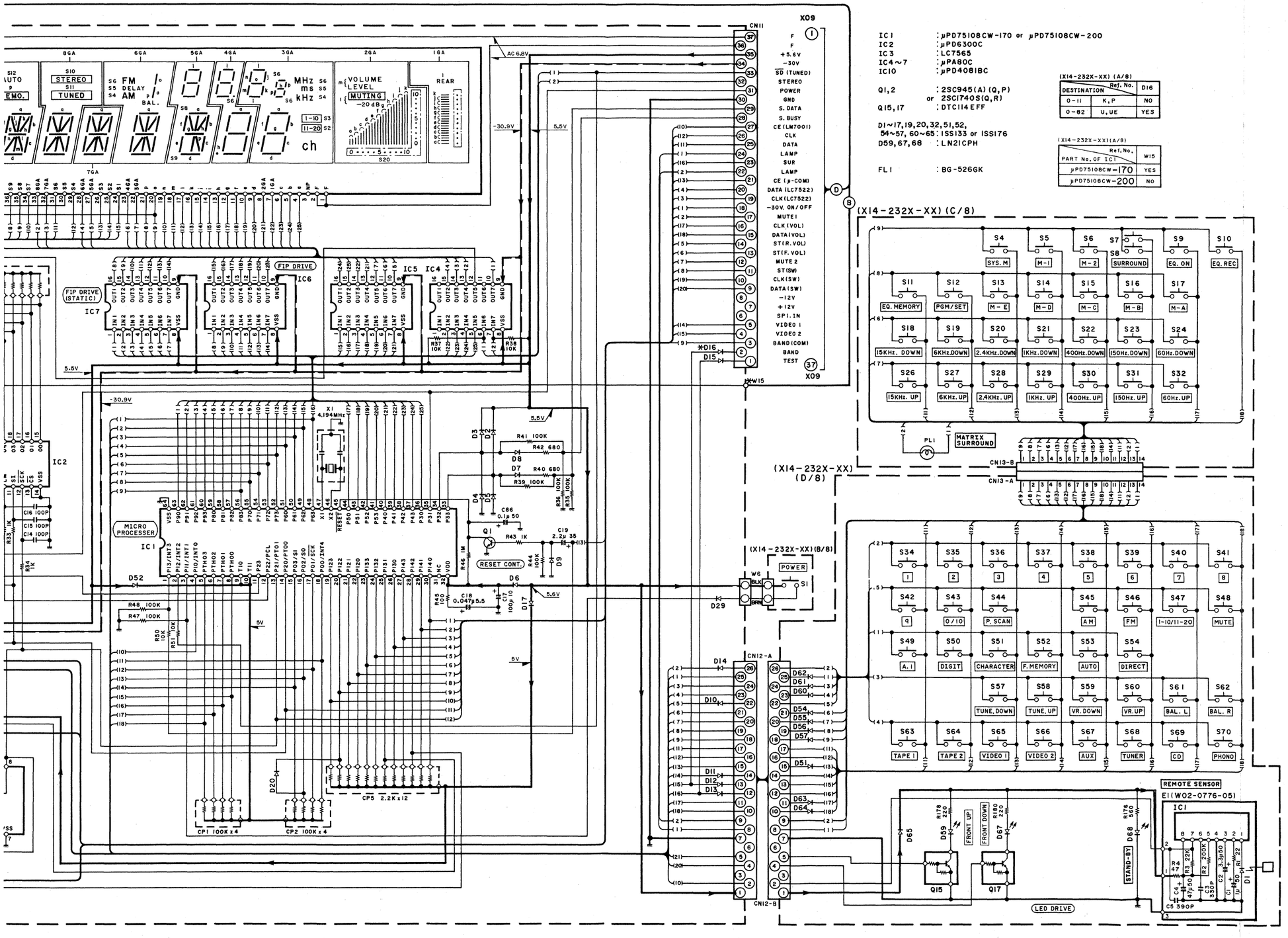
DTC114EFF



DTC114EFF

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.
- Les tensions c.c. doivent être measurées avec un voltmètre à haute impédance. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
- Die angegebenen Gleichspannungsw einem hochohmigen. Voltmeter s schwanken die Meßwerte aufgrund v zwischen einzelnen instrumenten od geringfügig.



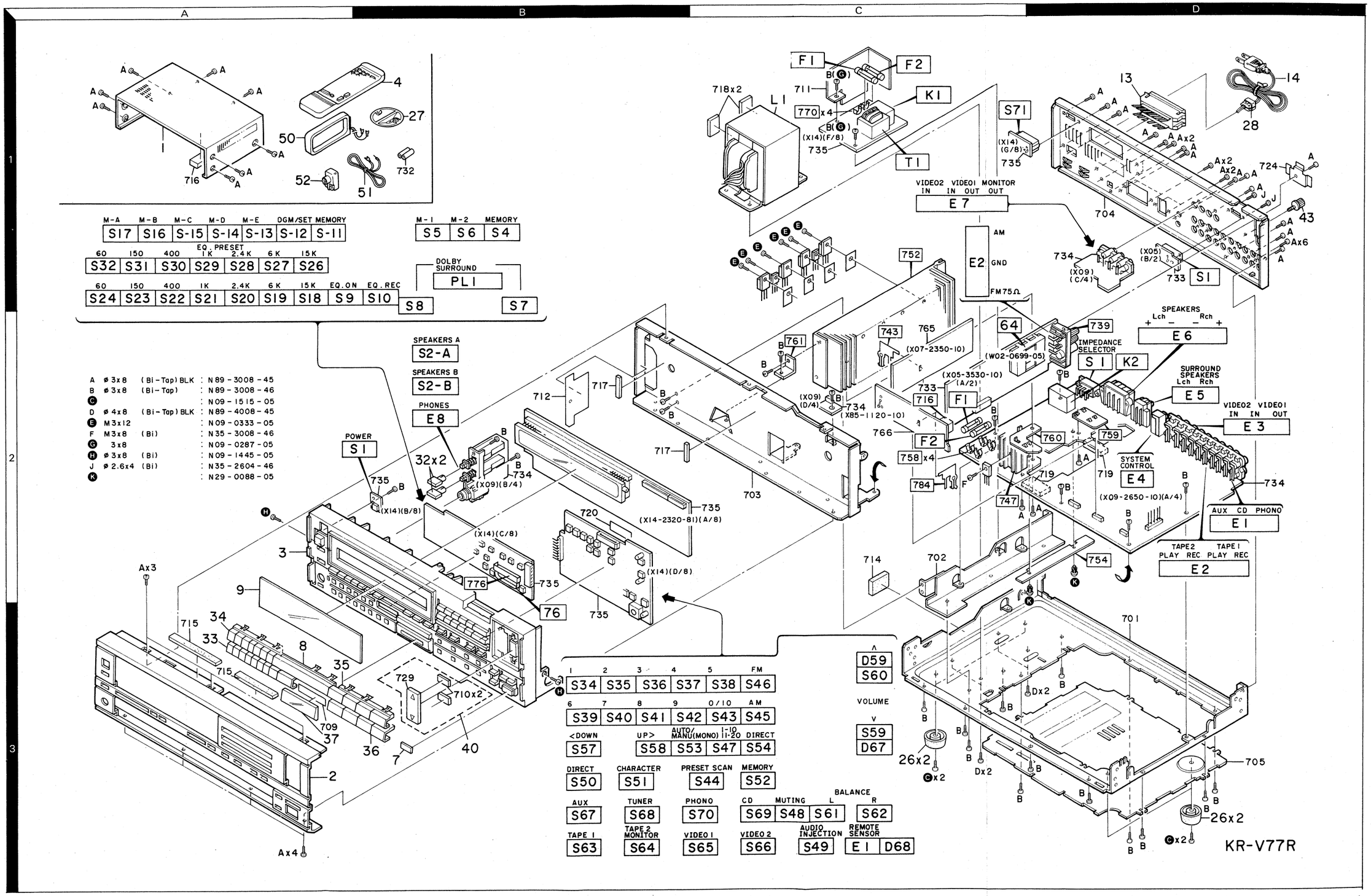
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.
- Les tensions c.c. doivent être measurées avec un voltmètre à haute impédance. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
- Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen. Voltmeter gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen instrumenten oder Geräten u.U. geringfügig.

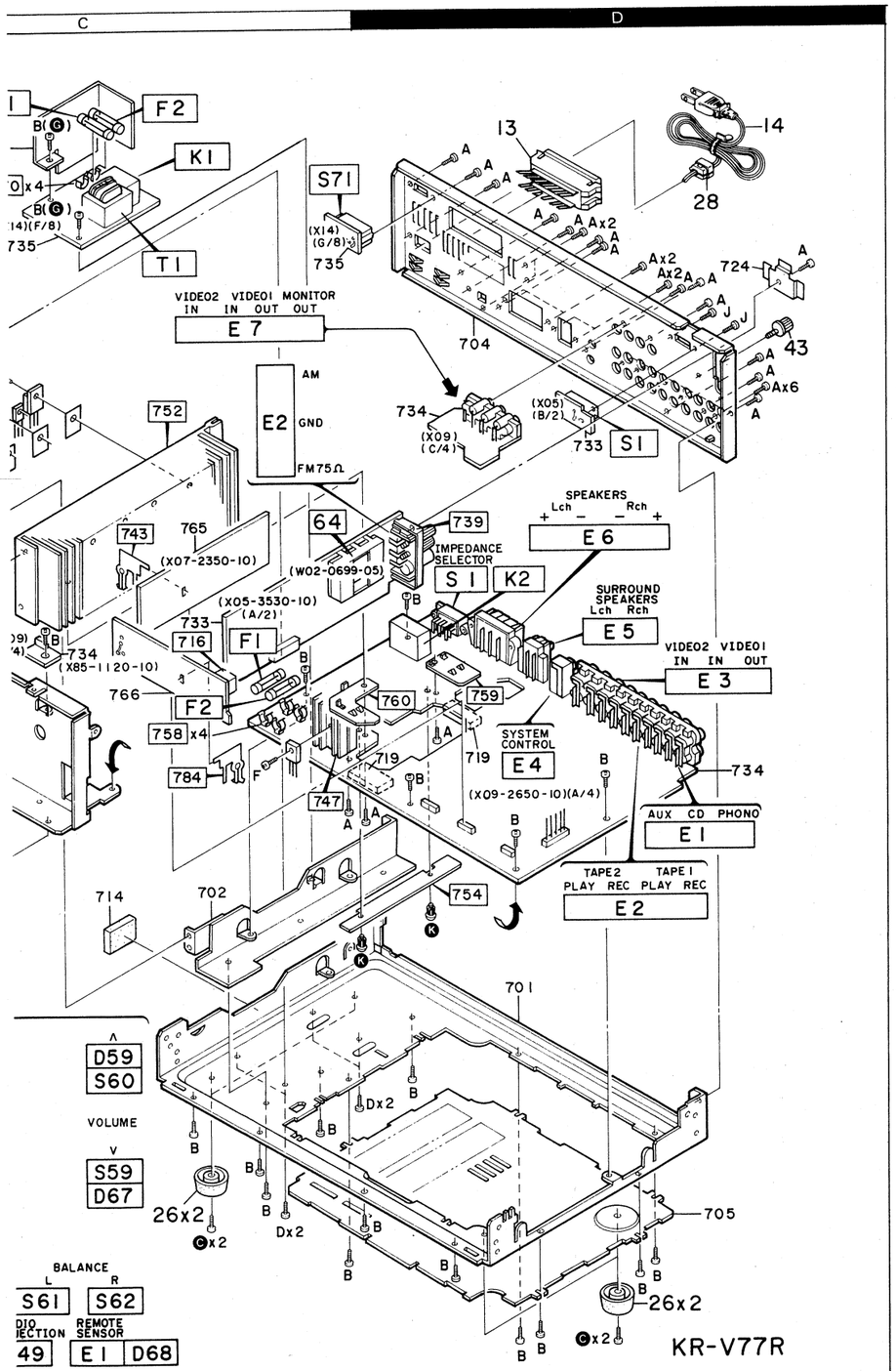
KR-V77R

KENWOOD

EXPLODED VIEW



Parts with the exploded numbers larger than 700 are not supplied.



Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

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			KR-V77R			
1	1A		A01-1650-01	METALLIC CABINET		
2	3A	*	A20-5535-02	PANEL		
3	2B,3B	*	A22-0980-01	SUB PANEL		
4	1B		A70-0206-05	REMOTE CONTROLLER ASSY	KUUE	
4	1B		A70-0207-05	REMOTE CONTROLLER ASSY	P	
7	3D		B03-2451-04	DRESSING PLATE		
8	3A	*	B07-1815-04	ESCUTCHEON		
9	3A	*	B10-0962-03	FRONT GLASS		
-			B46-0092-03	WARRANTY CARD	K	
-			B46-0094-03	WARRANTY CARD	UUE	
-			B46-0095-03	WARRANTY CARD	UUE	
-			B46-0121-03	WARRANTY CARD	P	
-			B50-8917-00	INSTRUCTION MANUAL(ENGLISH)	KUUE	
-			B50-8918-00	INSTRUCTION MANUAL(ENG,FRE)	P	
-			B58-0223-04	CAUTION CARD (PRE-SET 120V)	U	
-			B58-0513-04	CAUTION CARD (PRESET220-240)	UE	
-			B59-0092-00	SERVICE DIRECTORY	UUE	
⚠ 13	1D		E03-0086-05	AC OUTLET		
⚠ 14	1D		E30-0812-05	AC POWER CORD	UUE	
⚠ 14	1D		E30-2209-05	AC POWER CORD	KP	
-		*	H01-7927-04	ITEM CARTON CASE		
-			H10-3602-02	POLYSTYRENE FOAMED FIXTURE		
-			H10-3603-02	POLYSTYRENE FOAMED FIXTURE		
-			H25-0181-04	PROTECTION BAG (150X260X0.05)		
-			H25-0224-04	PROTECTION BAG (800X400X0.03)		
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
26	3D		J02-0170-04	FOOT		
27	1B		J19-2815-04	ANTENNA HOLDER		
⚠ 28	1D		J42-0083-05	POWER CORD BUSHING		
-			J61-0307-05	WIRE BAND		
32	2B		K27-1304-04	KNOB (BUTTON)		
33	3A		K29-2993-03	KNOB (GE)		
34	3A		K29-2994-03	KNOB (GE)		
35	2B		K29-2995-03	KNOB (SEL)		
36	3A		K29-2996-03	KNOB (SEL)		
37	3A	*	K29-2999-04	KNOB (MATRIX SURROUND)		
40	3B	*	K29-3253-04	KNOB ASSY		
⚠ L1	1C	*	L01-5391-05	POWER TRANSFORMER	KP	
⚠ L1	1C	*	L01-5395-05	POWER TRANSFORMER	UUE	
			N09-1445-05	SET SCREW (M3X8)		
43	1D		N08-0128-35	BINDING POST		
C			N09-1515-05	TAPPING SCREW (3X8) GND		
50	1A		T90-0104-25	LOOP ANTENNA		
51	2B		T90-0121-05	T TYPE ANTENNA		
52	1A		T90-0136-05	ANTENNA ADAPTOR		
			TUNER UNIT (X05-3530-10)			
C1 ,2			CK45FF1H103Z	CERAMIC 0.010UF Z		
C3			CC93FCH1H391J	CERAMIC 390PF J		
C4			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C5			CE04LW1V100M	ELECTRO 10UF 35WV		

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	2	3A	*	A20-5535-02	PANEL		
	3	2B,3B	*	A22-0980-01	SUB PANEL		
	4	1B		A70-0206-05	REMOTE CONTROLLER ASSY	KUUE	
	4	1B		A70-0207-05	REMOTE CONTROLLER ASSY	P	
	7	3D		B03-2451-04	DRESSING PLATE		
	8	3A	*	B07-1815-04	ESCUTCHEON		
	9	3A	*	B10-0962-03	FRONT GLASS		
	-			B46-0092-03	WARRANTY CARD	K	
	-			B46-0094-03	WARRANTY CARD	UUE	
	-			B46-0095-03	WARRANTY CARD	UUE	
	-			B46-0121-03	WARRANTY CARD	P	
	-			B50-8917-00	INSTRUCTION MANUAL(ENGLISH)	KUUE	
	-			B50-8918-00	INSTRUCTION MANUAL(ENG,FRE)	P	
	-			B58-0223-04	CAUTION CARD (PRE-SET 120V)	U	
	-			B58-0513-04	CAUTION CARD (PRESET220-240)	UE	
	-			B59-0092-00	SERVICE DIRECTORY	UUE	
⚠	13	1D		E03-0086-05	AC OUTLET		
⚠	14	1D		E30-0812-05	AC POWER CORD	UUE	
⚠	14	1D		E30-2209-05	AC POWER CORD	KP	
	-		*	H01-7927-04	ITEM CARTON CASE		
	-			H10-3602-02	POLYSTYRENE FOAMED FIXTURE		
	-			H10-3603-02	POLYSTYRENE FOAMED FIXTURE		
	-			H25-0181-04	PROTECTION BAG (150X260X0.05)		
	-			H25-0224-04	PROTECTION BAG (800X400X0.03)		
	-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
	26	3D		J02-0170-04	FOOT		
	27	1B		J19-2815-04	ANTENNA HOLDER		
⚠	28	1D		J42-0083-05	POWER CORD BUSHING		
	-			J61-0307-05	WIRE BAND		
	32	2B		K27-1304-04	KNOB (BUTTON)		
	33	3A		K29-2993-03	KNOB (GE)		
	34	3A		K29-2994-03	KNOB (GE)		
	35	2B		K29-2995-03	KNOB (SEL)		
	36	3A		K29-2996-03	KNOB (SEL)		
	37	3A	*	K29-2999-04	KNOB (MATRIX SURROUND)		
	40	3B	*	K29-3253-04	KNOB ASSY		
⚠	L1	1C	*	L01-5391-05	POWER TRANSFORMER	KP	
⚠	L1	1C	*	L01-5395-05	POWER TRANSFORMER	UUE	
				N09-1445-05	SET SCREW (M3X8)		
	43	1D		N08-0128-35	BINDING POST		
	C			N09-1515-05	TAPPING SCREW (3X8) GND		
	50	1A		T90-0104-25	LOOP ANTENNA		
	51	2B		T90-0121-05	T TYPE ANTENNA		
	52	1A		T90-0136-05	ANTENNA ADAPTOR		
				TUNER UNIT (X05-3530-10)			
	C1 ,2			CK45FF1H103Z	CERAMIC 0.010UF Z		
	C3			CC93FCH1H391J	CERAMIC 390PF J		
	C4			CE04LW1H010M	ELECTRO 1.0UF 50WV		
	C5			CE04LW1V100M	ELECTRO 10UF 35WV		

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C6			CK45FF1H103Z	CERAMIC 0.010UF Z		
C7			CK45FF1H223Z	CERAMIC 0.022UF Z		
C8 ,9			CK45FF1H103Z	CERAMIC 0.010UF Z		
C10 .			CK45FF1H223Z	CERAMIC 0.022UF Z		
C11 ,12			CK45FF1H103Z	CERAMIC 0.010UF Z		
C13 -15			CE04LW1C470M	ELECTRO 47UF 16WV		
C16			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C17			CE04LW1H3R3M	ELECTRO 3.3UF 50WV		
C18			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		
C19			CF92FV1H223J	MF 0.022UF J		
C20			CF92FV1H273J	MF 0.027UF J		
C21			CK45FF1H223Z	CERAMIC 0.022UF Z		
C22			CC45FSL1H101J	CERAMIC 100PF J		
C23			CE04LW1HR47M	ELECTRO 0.47UF 50WV		
C24			CF92FV1H273J	MF 0.027UF J		
C25			CC45FCH1H220J	CERAMIC 22PF J		
C26			CK45FF1H103Z	CERAMIC 0.010UF Z		
C27			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C28			CC45FCH1H220J	CERAMIC 22PF J		
C29 -31			CC45FSL1H101J	CERAMIC 100PF J		
C32			CK45FF1H103Z	CERAMIC 0.010UF Z		
C35			CC93FCH1H471J	CERAMIC 470PF J		
C36 ,37			CF92FV1H273J	MF 0.027UF J	UUE	
C36 ,37			CF92FV1H433J	MF 0.043UF J	KP	
C38 ,39			CF92FV1H153J	MF 0.015UF J	UUE	
C40			CE04LW1H3R3M	ELECTRO 3.3UF 50WV		
C41 -43			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C44			CK45FB1H471K	CERAMIC 470PF K		
C45			CF92FV1H473J	MF 0.047UF J		
C46			CE04LW1HR47M	ELECTRO 0.47UF 50WV		
C48			CE04LW1V100M	ELECTRO 10UF 35WV		
C49			CE04LW1C470M	ELECTRO 47UF 16WV		
C52 ,53			CC45FSL1H151J	CERAMIC 150PF J		
TC1 ,2			C05-0303-05	CERAMIC TRIMMER CAPACITOR(20PF		
E2			E20-0318-05	SCREW TERMINAL BOARD(2P) ANT		
CF1 ,2			L72-0531-05	CERAMIC FILTER		
CF3			L72-0099-05	CERAMIC FILTER		
CF4			L72-0096-05	CERAMIC FILTER		
L1			L40-1092-17	SMALL FIXED INDUCTOR(1UH,M)		
L2			L40-1021-14	SMALL FIXED INDUCTOR(1.0MH,K)		
L3			L40-1092-17	SMALL FIXED INDUCTOR(1UH,M)		
L4			L30-0439-15	FM IFT		
L8			L31-0509-05	MW-RF COIL		
L9			L32-0277-15	MW OSCILLATING COIL		
L10			L30-0362-05	AM IFT		
X1			L77-1122-05	CRYSTAL RESONATOR		
R14			RD14GB2E101J	FL-PROOF RD 100 J 1/4W		
R22 ,23			RD14GB2E101J	FL-PROOF RD 100 J 1/4W		
R24			RD14GB2E221J	FL-PROOF RD 220 J 1/4W		
R53			RD14GB2E330J	FL-PROOF RD 33 J 1/4W		
VR1			R12-3128-05	TRIMMING POT.(FM LEVEL)		
VR2			R12-3126-05	TRIMMING POT.(AM LEVEL)		
VR3			R12-1089-05	TRIMMING POT.(VCO)		

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S1			S31-2072-05	SLIDE SWITCH	UUE	
D1 ,2			1SS133	DIODE		
D1 ,2			1SS176	DIODE		
D3			HZS5.1N(B2)	ZENER DIODE		
D3			RD5.1ES(B2)	ZENER DIODE		
D4 -6			1SS133	DIODE		
D4 -6			1SS176	DIODE		
D7			KV1236(Z2)	VARIABLE CAPACITANCE DIODE		
D80 -82			1SS133	DIODE		
D80 -82			1SS176	DIODE		
IC1			LA1265	IC(FM/AM TUNER)		
IC2			LM7001	IC(PLL FREQUENCY SYNTHESIZER)		
IC3			AN7470	IC(FM MPX)		
Q1			2SC1923(R,S)	TRANSISTOR		
Q2			2SC1740S(Q,R)	TRANSISTOR		
Q2			2SC945(A)(Q,P)	TRANSISTOR		
Q3			2SC1845(F,E)	TRANSISTOR		
Q5 ,6			2SC1740S(Q,R)	TRANSISTOR	UUE	
Q5 ,6			2SC945(A)(Q,P)	TRANSISTOR	UUE	
Q7 ,8			2SA733(A)(Q,P)	TRANSISTOR		
Q7 ,8			2SA933S(Q,R)	TRANSISTOR		
64	2D		W02-0699-05	FM FRONT-END ASSY		
POWER AMPLIFIER UNIT (X07-2360-12)						
C1 ,2			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C3 ,4			CC45FSL1H101J	CERAMIC 100PF J		
C5 ,6			CE04LW1C220M	ELECTRO 22UF 16WV		
C9 ,10			CC45FSL1H560J	CERAMIC 56PF J		
C11 ,12			CC45FSL1H680J	CERAMIC 68PF J		
C13 ,14			CC45FSL1H221J	CERAMIC 220PF J		
C15 ,16			CK45FF1H103Z	CERAMIC 0.010UF Z		
C17 ,18			CK45FB1H222K	CERAMIC 2200PF K		
C19 ,20			CE04LW1J470M	ELECTRO 47UF 63WV		
C21			CE04LW1C470M	ELECTRO 47UF 16WV		
C22			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C23			CE04LW1V100M	ELECTRO 10UF 35WV		
C25 ,26			CC45FSL1H020C	CERAMIC 2.0PF C		
R13 ,14			RD14GB2E221J	FL-PROOF RD 220 J 1/4W		
R17 ,18			RD14GB2E221J	FL-PROOF RD 220 J 1/4W		
R23 ,24			RD14GB2E271J	FL-PROOF RD 270 J 1/4W		
R27 -30			RD14GB2E4R7J	FL-PROOF RD 4.7 J 1/4W		
R31 -34			RD14GB2E221J	FL-PROOF RD 220 J 1/4W		
R35 -38			RD14GB2E2R2J	FL-PROOF RD 2.2 J 1/4W		
R45 ,46			RD14GB2E330J	FL-PROOF RD 33 J 1/4W		
VR1 ,2			R12-1070-05	TRIMMING POT. (1K) BIAS-L,R		
D1 ,2			1SS133	DIODE		
D1 ,2			1SS176	DIODE		
D3 -6			1SS131	DIODE		
D3 -6			1SS178	DIODE		
D7			1SS133	DIODE		
D7			1SS176	DIODE		

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Q1 -4			2SA992(F,E)	TRANSISTOR			
Q5 -8			2SC1845(F,E)	TRANSISTOR			
Q9 ,10			2SA992(F,E)	TRANSISTOR			
Q11 ,12			2SC2590	TRANSISTOR			
Q13 ,14			2SA1110	TRANSISTOR			
Q15 ,16			2SC1845(F,E)	TRANSISTOR			
Q17			2SA992(F,E)	TRANSISTOR			
Q18 ,19			2SC945(A)(Q,P)	TRANSISTOR			
AUDIO UNIT (X09-2650-11)							
C1 ,2			CE04LW1V100M	ELECTRO	10UF	35WV	
C3 ,4			CC45FSL1H221J	CERAMIC	220PF	J	
C5 ,6			CK45FB1H561K	CERAMIC	560PF	K	
C7 ,8			CE04LW1A101M	ELECTRO	100UF	10WV	
C9 ,10			CF92FV1H123J	MF	0.012UF	J	
C11 ,12			CF92FV1H332J	MF	3300PF	J	
C13 ,14			CE04LW1V4R7M	ELECTRO	4.7UF	35WV	
C21 ,22			CC45FSL1H221J	CERAMIC	220PF	J	
C25 ,26			CC45FSL1H221J	CERAMIC	220PF	J	
C29 ,30			CC45FSL1H221J	CERAMIC	220PF	J	
C35			CE04LW1H010M	ELECTRO	1.0UF	50WV	
C36 -40			CK45FF1H103Z	CERAMIC	0.010UF	Z	
C43 ,44			CE04LW1HR47M	ELECTRO	0.47UF	50WV	
C45 ,46			CC45FSL1H101J	CERAMIC	100PF	J	
C47 ,48			CE04LW1V100M	ELECTRO	10UF	35WV	
C49 ,50			CE04LW1HR47M	ELECTRO	0.47UF	50WV	
C51 ,52			CC45FSL1H101J	CERAMIC	100PF	J	
C53 -56			CE04LW1V100M	ELECTRO	10UF	35WV	
C59 ,60			CF92FV1H473J	MF	0.047UF	J	
C85		*	CE04LW1J100M	ELECTRO	10UF	63WV	
C86			CE04LW1V100M	ELECTRO	10UF	35WV	
C87 ,88			CK45FF1H103Z	CERAMIC	0.010UF	Z	
C89 ,90			C90-1500-05	ELECTRO	5600UF	63WV	
C91 ,92			CE04LW1E222M	ELECTRO	2200UF	25WV	
C93			CE04LW1C101M	ELECTRO	100UF	16WV	
C94			CE04LW1V100M	ELECTRO	10UF	35WV	
C95			CE04LW1C101M	ELECTRO	100UF	16WV	
C96			CE04LW1H101M	ELECTRO	100UF	50WV	
C97 -100			CE04LW1C101M	ELECTRO	100UF	16WV	
C101,102			CE04LW1V4R7M	ELECTRO	4.7UF	35WV	
C110,111			CE04LW1A101M	ELECTRO	100UF	10WV	
C112			CE04LW0J471M	ELECTRO	470UF	6.3WV	
C113			CE04LW1A101M	ELECTRO	100UF	10WV	
C114			CE04LW0J471M	ELECTRO	470UF	6.3WV	
C115			CE04LW1C101M	ELECTRO	100UF	16WV	
C116			CK45FB1H102K	CERAMIC	1000PF	K	
C117,118			CK45FF1H103Z	CERAMIC	0.010UF	Z	
C119			CE04LW1C330M	ELECTRO	33UF	16WV	
C120			CE04LW1HR47M	ELECTRO	0.47UF	50WV	
C121			CK45FF1H103Z	CERAMIC	0.010UF	Z	
C122			CE04LW1C470M	ELECTRO	47UF	16WV	
C123			CE04LW1V100M	ELECTRO	10UF	35WV	
C126			CF92FV1H104J	MF	0.10UF	J	
C127			CE04LW1V100M	ELECTRO	10UF	35WV	
C128-130			CK45FF1H472Z	CERAMIC	4700PF	Z	

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C131			CK45FF1H103Z	CERAMIC 0.010UF Z		
CN1		*	E10-3701-05	FLAT CABLE CONNECTOR		
CN3		*	E10-0711-05	FLAT CABLE CONNECTOR		
CN4		*	E10-0614-05	FLAT CABLE CONNECTOR		
E1			E13-0621-05	PHONO JACK (6P) PHON,VIDEO		
E2			E13-0820-05	PHONO JACK (8P) TAPE1,2		
E3		*	E13-0621-05	PHONO JACK (6P) PHON,VIDEO		
E4			E11-0165-05	MINIATURE PHONE JACK(SYSTEM)		
E5			E20-0475-05	LOCK TERMINAL BOARD(SURROU SP)		
E6			E20-0823-05	LOCK TERMINAL BOARD(8P)SPEAKER		
E7			E13-0487-05	PHONO JACK		
E8			E11-0162-05	PHONE JACK (3P) PHONES		
⚠ F1 ,2		*	F05-1628-05	FUSE (UL)	P	
L1 ,2			L39-0085-05	PHASE-COMPENSATION COIL		
E			N09-0333-05	TAPPING SCREW (3X12)		
K			N29-0088-05	PUSH RIVET (3X6.3)	P	
CP1 ,2			R90-0187-05	MULTI-COMP 0.22X2 K 5W		
R79 ,80			RS14KB3D4R7J	FL-PROOF RS 4.7 J 2W		
R81 ,82			RD14GB2E100J	FL-PROOF RD 10 J 1/4W		
R83 ,84			RS14KB3A561J	FL-PROOF RS 560 J 1W		
R114			RD14GB2E4R7J	FL-PROOF RD 4.7 J 1/4W		
R115			RS14KB3D332J	FL-PROOF RS 3.3K J 2W		
R117			RS14KB3A681J	FL-PROOF RS 680 J 1W		
R127			RS14KB3A220J	FL-PROOF RS 22 J 1W		
R128			RD14GB2E4R7J	FL-PROOF RD 4.7 J 1/4W		
R133			RS14KB3A332J	FL-PROOF RS 3.3K J 1W		
R142-145			RD14GB2E470J	FL-PROOF RD 47 J 1/4W		
R173			RD14GB2E470J	FL-PROOF RD 47 J 1/4W		
R174			RD14GB2E4R7J	FL-PROOF RD 4.7 J 1/4W		
K2			S51-2078-05	MAGNETIC RELAY		
S1			S31-2136-05	SLIDE SWITCH		
S2			S42-2156-05	MULTIPLE PUSH SWITCH		
D1 -40			1SS133	DIODE		
D1 -40			1SS176	DIODE		
D44			DSM1A1	DIODE		
D44			S5566B	DIODE		
D48			DSM1A1	DIODE		
D48			S5566B	DIODE		
D49 ,50			1SS131	DIODE		
D49 ,50			1SS178	DIODE		
D51			1SS133	DIODE		
D51			1SS176	DIODE		
D53			1SS131	DIODE		
D53			1SS178	DIODE		
D54			DSM1A1	DIODE		
D54			S5566B	DIODE		
D55			D5SBA20F03	DIODE		
D55			RBV-602LFA	DIODE		
D57			KBP02ML-6127	DIODE		
D58			1SS133	DIODE		
D58			1SS176	DIODE		

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D59			DSM1A1	DIODE		
D59			S5566B	DIODE		
D60 ,61			HZS18N(B)	ZENER DIODE		
D60 ,61			RD18ES(B)	ZENER DIODE		
D62			HZS11N(B)	ZENER DIODE		
D62			RD11ES(B)	ZENER DIODE		
D63			HZS6.8N(B2)	ZENER DIODE		
D63			RD6.8ES(B2)	ZENER DIODE		
D66			HZS5.1N(B2)	ZENER DIODE		
D66			RD5.1ES(B2)	ZENER DIODE		
D67			HZS6.8N(B2)	ZENER DIODE		
D67			RD6.8ES(B2)	ZENER DIODE		
D68 ,69			1SS133	DIODE		
D68 ,69			1SS176	DIODE		
D70 -73			1SS131	DIODE		
D70 -73			1SS178	DIODE		
D83			DSM1A1	DIODE		
D83			S5566B	DIODE		
D84 -89			1SS133	DIODE		
D84 -89			1SS176	DIODE		
IC1			NJM4558D-A	IC(OP AMP X2)		
IC1			NJM4560D	IC(OP AMP X2)		
IC2			TC9164N	IC(16CH BILATERAL SELECTOR SW)		
IC3			TC9162N	IC(ANALOG SWITCH ARRAY)		
IC4			LC4966	IC(CMOS LOGIC BILATERAL SW)		
IC5			M5218P	IC(OP AMP X2)		
IC5			NJM4558D	IC(OP AMP X2)		
IC6			TC9176P	IC(2CH ELECTRONIC VOLUME)		
IC7			NJM4558D-A	IC(OP AMP X2)		
IC7			NJM4560D	IC(OP AMP X2)		
IC10			UPC7812HF	IC(VOLTAGE REGULATOR/ +12V)		
Q1 -4			2SC2878(B)	TRANSISTOR		
Q5 ,6			2SC3855*5	TRANSISTOR		
Q7 ,8			2SA1491*5	TRANSISTOR		
Q9 ,10			2SC3419(Y)	TRANSISTOR		
Q23			2SA954(L,K)	TRANSISTOR		
Q24			2SC1740S(Q,R)	TRANSISTOR		
Q24			2SC945(A)(Q,P)	TRANSISTOR		
Q25			2SC2003(L,K)	TRANSISTOR		
Q26			2SA954(L,K)	TRANSISTOR		
Q27			2SD1266	TRANSISTOR		
Q28 ,29			2SA733(A)(Q,P)	TRANSISTOR		
Q28 ,29			2SA933S(Q,R)	TRANSISTOR		
Q30			2SB772	TRANSISTOR		
Q31			2SA954(L,K)	TRANSISTOR		
Q32 ,33			2SA733(A)(Q,P)	TRANSISTOR		
Q32 ,33			2SA933S(Q,R)	TRANSISTOR		
Q34 ,35			2SA999(E,F)	TRANSISTOR		
Q37			2SD1266	TRANSISTOR		
Q38 ,39			2SC2878(B)	TRANSISTOR		
Q40			2SC1740S(Q,R)	TRANSISTOR	UUE	
Q40			2SC945(A)(Q,P)	TRANSISTOR	UUE	
Q41 ,42		*	DTC144TFF	DIGITAL TRANSISTOR		
Q43			2SC2003(L,K)	TRANSISTOR		
DISPLAY UNIT (X14-2320-11)						
76	2B		A33-0101-04	REFLECTOR		

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D59			B30-0431-05	LED(LN21CPH)		
D67 ,68			B30-0431-05	LED(LN21CPH)		
PL1			B30-1239-05	LAMP		
C9 ,10			CE04LW1V100M	ELECTRO 10UF 35WV		
C11			CF92FV1H152J	MF 1500PF J		
C12 -16			CC45FSL1H101J	CERAMIC 100PF J		
C17			CE04JW1A101M	ELECTRO 100UF 10WV		
C18			C91-0937-05	BACKUP 0.047F 5.5WV		
C19			CE04JW1V2R2M	ELECTRO 2.2UF 35WV		
C81			CE04LW1V100M	ELECTRO 10UF 35WV		
C82			CE04LW1C470M	ELECTRO 47UF 16WV		
C83			CE04LW1V4R7M	ELECTRO 4.7UF 35WV	UUE	
C84		*	CE04LW1E471M	ELECTRO 470UF 25WV	KP	
C84			CE04LW1V102M	ELECTRO 1000UF 35WV	UUE	
C86			CE04JW1H0R1M	ELECTRO 0.1UF 50WV		
CN5			E10-0509-05	FLAT CABLE CONNECTOR		
CN11		*	E10-3702-05	FLAT CABLE CONNECTOR		
CN12		*	E10-2605-05	FLAT CABLE CONNECTOR		
F1		*	F05-6029-05	FUSE (UL)	KP	
F1 ,2	1C	*	F06-3027-05	FUSE (UL)	UUE	
⚠ T1	1C		L01-7651-05	POWER TRANSFORMER	KP	
⚠ T1	1C		L01-7658-05	POWER TRANSFORMER	UUE	
X1			L78-0209-05	RESONATOR (4.194MHZ)		
CP1 ,2			R90-0482-05	MULTI-COMP 100KX4 J 1/6W		
CP3			R90-0492-05	MULTI-COMP 100KX8 J 1/6W		
CP4			R90-0483-05	MULTI-COMP 100KX13 J 1/6W		
CP5			R90-0806-05	MULTIPLE RESISTOR		
CP6			R90-0465-05	MULTI-COMP 100K13 J 1/6W		
R138			RD14GB2E222J	FL-PROOF RD 2.2K J 1/4W	KP	
R138			RD14GB2E392J	FL-PROOF RD 3.9K J 1/4W	UUE	
R167			R92-0173-05	RC 2.2M M 1/2W	KP	
K1			S51-1052-05	MAGNETIC RELAY		
S1			S40-1064-05	PUSH SWITCH (POWER)		
S4 -24			S40-1064-05	PUSH SWITCH (EQ.REC/SORR,EXT)		
S26 -32			S40-1064-05	PUSH SWITCH (UP/DOWN)		
S34 -54			S40-1064-05	PUSH SWITCH (MUTE,DIRECT,EXT)		
S57 -70			S40-1064-05	PUSH SWITCH (TUNE,VR,EXT)		
⚠ S71			S31-2128-05	SLIDE SWITCH (POWER TYPE)AC	UUE	
D1 -15			1SS133	DIODE	KP	
D1 -15			1SS176	DIODE		
D1 -17			1SS133	DIODE	UUE	
D1 -17			1SS176	DIODE		
D17			1SS133	DIODE	KP	
D17			1SS176	DIODE		
D20			1SS133	DIODE		
D20			1SS176	DIODE		
D29			1SS133	DIODE		
D29			1SS176	DIODE		
D32			1SS133	DIODE		
D32			1SS176	DIODE		
D41 -44			DSM1A1	DIODE	KP	
D41 -44			S5566B	DIODE	KP	

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D41 -46			DSM1A1	DIODE	UUE	
D41 -46			S5566B	DIODE	UUE	
D47			HZS6.2N(B2)	ZENER DIODE		
D47			RD6.2ES(B2)	ZENER DIODE		
D48 ,49			1SS133	DIODE	UUE	
D48 ,49			1SS176	DIODE		
D50			DSM1A1	DIODE		
D50			S5566B	DIODE		
D51 ,52			1SS133	DIODE		
D51 ,52			1SS176	DIODE		
D54 -57			1SS133	DIODE		
D54 -57			1SS176	DIODE		
D60 -65			1SS133	DIODE		
D60 -65			1SS176	DIODE	KP	
D69 ,70			1SS133	DIODE	UUE	
D69 ,70			1SS176	DIODE		
FL1			BG-526GK	FLUORESCENT INDICATOR TUBE		
IC1		*	UPD75108CW-200	IC(MICROPROCESSOR)		
IC2			UPD6300C	IC(FL LATCH DRIVER)		
IC3			LC7565	IC(GRAPHIC EQ FL DISPLAY DR)		
IC4 -7			UPA80C	IC(7CH TRANSISTOR ARRAY)		
IC10			UPD4081BC	IC(AND X4)		
IC14			PST529C	IC(SYSTEM RESET)		
Q1 ,2			2SC1740S(Q,R)	TRANSISTOR		
Q1 ,2			2SC945(A)(Q,P)	TRANSISTOR		
Q9			2SD1266	TRANSISTOR	UUE	
Q10			2SD1266	TRANSISTOR		
Q11			2SC1740S(Q,R)	TRANSISTOR	UUE	
Q11			2SC945(A)(Q,P)	TRANSISTOR	UUE	
Q12			2SA954(L,K)	TRANSISTOR	UUE	
Q13			2SC2003(L,K)	TRANSISTOR	KP	
Q13			2SD1266	TRANSISTOR	UUE	
Q15			DTC114EFF	DIGITAL TRANSISTOR		
Q17			DTC114EFF	DIGITAL TRANSISTOR		
E1	3B		W02-0776-05	ELECTRIC CIRCUIT MODULE		
EQUALIZER UNIT (X85-1120-10)						
C1 ,2			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C3 ,4			CK45FB1H471K	CERAMIC 470PF K		
C5 ,6			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C7 ,8			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C9 ,10			CF92FV1H124J	MF 0.12UF J		
C11 ,12			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C13 ,14			CF92FV1H473J	MF 0.047UF J		
C15 ,16			CE04LW1HR33M	ELECTRO 0.33UF 50WV		
C17 ,18			CF92FV1H183J	MF 0.018UF J		
C19 ,20			CF92FV1H124J	MF 0.12UF J		
C21 ,22			CF92FV1H822J	MF 8200PF J		
C23 ,24			CF92FV1H563J	MF 0.056UF J		
C25 ,26			CF92FV1H272J	MF 2700PF J		
C27 ,28			CF92FV1H183J	MF 0.018UF J		
C29 ,30			CF92FV1H152J	MF 1500PF J		
C31 ,32			CF92FV1H822J	MF 8200PF J		
C33 ,34			CK45FB1H471K	CERAMIC 470PF K		
C35			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		

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D1			HZS6.8N(B2)	ZENER DIODE		
D1			RD6.8ES(B2)	ZENER DIODE		
IC1			LC7522	IC(7CH GRAPHIC EQUALIZER)		
IC2 ,3			M5229P	IC(7CH GRAPHIC EQUALIZER)		
FM FRONT-END ASS'Y (W02-0699-05)						
D1 -3			1SV110	DIODE		
TR1			2SK439	TRANSISTOR		
TR2 ,3			2SC3391	TRANSISTOR		
TR4			2SC3494	TRANSISTOR		

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KR-V77R

SPECIFICATIONS

KR-V77R
AUDIO SECTION
Power Output

70 watts per channel minimum RMS, both channel driven at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.03% total harmonic distortion

80 watts per channel minimum RMS, both channel driven at 8 ohms at 1kHz with no more than 0.03 % total harmonic distortion

Total Harmonic Distortion	
(1 kHz, 8 ohms)	0.007 % at 70 W
Intermodulation Distortion	0.03 % at 70 W
Input Sensitivity/Impedance	
PHONO (MM)	2.5 mV/47 kohms
CD, AUX, TAPE, VIDEO	200 mV/47 kohms
Frequency Response	
TAPE, CD, AUX, VIDEO	10 Hz – 70,000 Hz $^{+0\ dB}_{-3\ dB}$
Signal to Noise Ratio	
PHONO (MM)	73 dB
CD, AUX, TAPE, VIDEO	100 dB
Graphic Equalizer	
Center Frequency	60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz
Control Range	±12 dB

VIDEO SECTION

Inputs/Outputs VIDEO 1,2	1 Vp-p, 75 ohms unbalanced

FM TUNER SECTION

Tuning Frequency Range	87.5 MHz – 108 MHz
Antenna Impedance	75 ohms unbalanced
Usable Sensitivity	10.8 dBf (0.95 μV)
50 dB Quieting Sensitivity	
MONO	14.2 dBf (1.4 μV)
STEREO	37.2 dBf (20 μV)
Signal to Noise Ratio at 65 dBf	
MONO	78 dB
STEREO	72 dB
Total Harmonic Distortion at 1,000 Hz	
MONO	0.2 %
STEREO	0.3 %
Frequency Response	30 Hz – 15,000 Hz $^{+0.5\ dB}_{-2.5\ dB}$
Stereo Separation	40 dB at 1,000 Hz
Selectivity	53 dB at 400 kHz
Capture Ratio	1.2 dB
Image Rejection Ratio	40 dB
IF Rejection Ratio	86 dB
Spurious Rejection Ratio	80 dB
AM Suppression Ratio	57 dB

AM TUNER SECTION

Tuning Frequency Range	
530 kHz – 1,610 kHz	
(with the AM tuning interval set at 10 kHz)	
531 kHz – 1,602 kHz	
(with the AM tuning interval set at 9 kHz)	
Usable Sensitivity	10 μV/(400μV/m)
Signal to Noise Ratio	50 dB
Total Harmonic Distortion	0.3 %
Selectivity	25 dB

GENERAL

Power Consumption	3.2A... USA Model/200W... Others
Dimensions	420(W) × 129(H) × 322(D)mm (16-9/16"×5-1/16"×12-11/16")
Weight (Net)	8.2 kg (18.1 lb)

Note:

We follow a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Note :

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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